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ABSTRACT

This report summarizes the proceedings of a conference that brought together 35 librarians, network representatives, and system vendors to exchange information on the training of users of online public access catalogs. Three papers are presented: "Historic Concerns in Library Instruction: Teaching the Card Catalog," by Evan Farber; "The Nationwide Computer Catalog Study: Training Issues," by Douglas Ferguson; and "Psychological Factors in Online Catalog Use, or Why Users Fail," by Christine L. Borgman. Also presented are summary descriptions of current online catalog user training programs at Northwestern University; Mankato State University; Pikes Peak Library; Dartmouth College; University of California, Berkeley; Iowa City Public Library; Guelph University; University of Illinois at Urbana-Champaign; and the Library of Congress. A transcript of a panel presentation on the communication between public service and systems staff in building the online catalog is followed by a brief summary of the conference, which focuses on its four main themes: communication, diversity versus standardization, system enhancements that facilitate user training, and the use of goal-oriented training versus the provision of a learning environment. Conference recommendations are also recorded. Appendices provide a list of conference participants, the conference agenda, and a list of handouts distributed to participants. (ESR)

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TRAINING USERS OF ONLINE PUBLIC ACCESS CATALOGS

Report of a conference sponsored by
Trinity University
and
The Council on Library Resources

San Antonio, Texas
January 12-14, 1983

Compiled and edited by
Marsha Hamilton McClintock

The Council on Library Resources, Inc.
1785 Massachusetts Avenue, N.W.
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The Conference on Training Users of Online Public Access Catalogs benefited from a happy blend of expertise and enthusiasm. All participants, CLR staff, San Antonio area library directors, and other attendees should be commended for their enthusiasm, ideas, and stamina. Those who should receive special thanks include: Robert A. Houze, Director of the Trinity University Library, and Ruby Miller, Director of Technical Processing at the Trinity University Library, for their masterful handling of local arrangements; participants Evan Farber, Doug Ferguson, Christine Borgman, Brian Nielsen, Sandra Ready, Lynn Magrath, Emily Fayen, Anne Lipow, Lolly Eggers, Ellen Pearson, Danuta Nitecki, Linda Arrett, Pat Swanson, Ruth Gibbs, Trarie Kottkamp, Susan Stearns, and David Penniman, for their presentations and their subsequent help in editing the reports of those presentations; and Lee Jones, Keith Russell, and other CLR staff who helped make this conference and these proceedings possible. A sincere expression of appreciation goes to all Trinity University staff and librarians who provided the setting and Texas hospitality for the conference.

But, dear reader, let me share with you Evan Farber's view of what is missing in these proceedings. The following note accompanied his edited version of my draft of his remarks: "...it's fine. Of course, it doesn't convey the humor, the wisdom, the flashes of insight, nor does it indicate the tumultuous applause that interrupted the talk again and again, the cries of 'right on', 'amen', and 'hear, hear' -- but no summary could catch all that."

This conference was funded as part of the Council's Bibliographic Service Development Program, a program administered by CLR and funded by several parties: the Carnegie Corporation, the Commonwealth Fund, the Ford Foundation, the William and Flora Hewlett Foundation, the Lilly Endowment, the Andrew W. Mellon Foundation, the Alfred P. Sloan Foundation, and the National Endowment for the Humanities.

PREFACE

The effective use of recorded information is, in the final analysis, the driving force behind most library activity. As the sheer quantity of available information increases, the problem of recording, describing, and locating any specific item has grown more complicated. And the card catalog, the traditional file of such records, has begun to break down in terms of reliability, even as maintenance costs increase.

The arrival of the online catalog is a good example of well-timed technology. Not only do these catalogs promise long-term relief from the service and cost problems inherent in very large card catalogs, but they also provide search capabilities not previously possible. Further, they open ways to equalize access to information, with the potential capability of tapping bibliographic databases that transcend the holdings of any individual library. By extension, this offers new opportunities for cooperative development of bibliographic files and the constructive standardization of records and underlying system software.

While the machinery of bibliographic control grows more complex, it does not necessarily follow that users of the new systems will suffer. The leaders of the online catalog revolution (and it is truly a revolution) are paying much attention to the needs of users. Both systems designers and librarians who are responsible for introducing the new catalogs are making a concerted effort to assure that the transition is one that enhances service.

The conference reported in this book underscores the depth of library concern that improved service for users, not simply operating efficiency, be the primary target in implementing online catalogs. By sharing knowledge and skills, the transition to a new and fundamentally different way of putting recorded information to use promises to be accomplished with real style.

Warren J. Haas
July 1983

I. INTRODUCTION

Through its Bibliographic Service Development Program, the Council on Library Resources has focused on methods for improving access to bibliographic information for library users. Much recent attention has been given to the online catalog and possible ways of improving subject access, and CLR has in recent years sponsored meetings and commissioned papers to explore related topics. At two of those meetings, the Subject Access Meeting (Dublin, Ohio, June 1982)[1] and the Conference on Online Catalogs: Requirements, Characteristics and Costs (Wye Plantation, Maryland, December 1982)[2], recommendations were made that CLR should continue to foster communication between librarians, vendors, network staff, system designers, researchers, and other interested parties in a number of areas. One specific topic targeted for attention in the near future was the training of users of online catalogs.

As a result of that recommendation CLR sponsored the Conference on Training Users of Online Public Access Catalogs, held in San Antonio, Texas, January 12-14, 1983. The purpose of the conference was to bring together experienced trainers of online catalog users so that information on training strategies, problems, and solutions could be exchanged between and among the participants. This report summarizes the proceedings at that meeting, and is a means of sharing the experiences of participants with others who are concerned with finding the most effective techniques for training users of online catalogs.

Thirty-five representatives from libraries, networks, systems offices, and system vendors met for three days of intensive meetings to discuss past experiences, present programs, and future possibilities for educating library patrons in the effective use of online public access catalogs. (Participants are listed in Appendix A.)

The conference included the presentation of papers on (a) the implications of what we have learned from teaching use of the card catalog for the training of online catalog users, (b) results of the recent online public access catalog study that have implications for training users, and (c) psychological factors that affect online catalog use and should be considered in designing user training programs. These papers are presented in chapters 2, 3, and 4, respectively. In addition, the University of California final report on the online public access catalog study[3] was provided to participants in advance of the meeting.

A significant portion of the conference was devoted to reports from nine institutions that have online catalogs. Representatives of those institutions candidly reported on the various techniques -- both successful and unsuccessful -- they have used to train online catalog users; chapter 5 summarizes those reports and the discussions they stimulated. Samples of user aids were distributed, some audiovisual materials were shown, and some systems were demonstrated in a classroom setting; materials distributed as handouts are listed in Appendix C. Following those presentations, eight online systems were demonstrated in small group settings, with the opportunity for conference participants to try out various features of the systems.

The conference also included a panel presentation on communication between public service staff and system staff. Chapter 6 is a summary of the individual presentations of panel members and the discussion that followed. To conclude the conference, the editor summarized the main themes of the conference from her perspective, and each participant was invited to make observations on the conference. Chapter 7 is based on that summary and those observations, and chapter 8 reports three recommendations that emanated from the conference. Appendix B is the agenda followed at the conference.

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[1] For more information see: Subject Access; Report of a Meeting Sponsored by the Council on Library Resources, Dublin, Ohio, June 7-9, 1982. Compiled and edited by Keith W. Russell. Washington, D.C., Council on Library Resources, December 1982.

[2] For more information see: Online Catalogs: Requirements, Characteris tics and Costs. Report of a Conference Sponsored by the Council on Library Resources at the Aspen Institute, Wye Plantation, Queenstown, Maryland, December 14-16, 1982. Compiled and edited by Davis B. McCarn. Washington, D.C., Council on Library Resources, March 1983.

[3] Users Look at Online Catalogs: Results of a National Survey of Users and Non-Users of Online Public Access Catalogs. Final report to the Council on Library Resources. By the University of California Division of Library Automation and Library Research and Analysis Group. Berkeley, CA, November 16, 1982.

II. HISTORIC CONCERNS IN LIBRARY INSTRUCTION:
TEACHING THE CARD CATALOG

by Evan Farber, Earlham College

My comments on teaching the card catalog will cover five areas:

1. Background remarks and assumptions about the card catalog
2. Overdependence on the card catalog
3. Teaching what the card catalog does not do
4. Teaching what the card catalog does do and how to do it
5. The role of the card catalog in searching for information

These comments are based on the library literature and on twenty years' experience teaching and devising assignments with librarians. College students are assumed to have some experience with the card catalog and perhaps the Reader's Guide to Periodical Literature but little else. The real problem for library staff is not so much teaching use of the catalog as instilling in students an understanding of bibliographic instruction and search strategy. Students' preferred search method is to look in the catalog for books and in the Reader's Guide for periodical literature, and to use this same strategy regardless of the type of material needed.

It is assumed that students can transfer knowledge of how to use indexes from one subject to another. We like to think an understanding of the Reader's Guide to Periodical Literature should be transferable to other indexes or should instill in students the idea of indexes. But an understanding of the card catalog takes years to develop and, due to card catalog variation and subtle complexities, knowledge of its use is not so easily transferred. Students may also assume a level of competency in card catalog use that they actually lack. Students believe that the card catalog is the foundation of the library system, disregarding the catalog's inadequacies and shortcomings, and thus ignore librarians' warnings against using the card catalog exclusively for research.

Some of this reluctance may be a result of the physical prominence of the card catalog in most libraries. It is the first and most impressive tool to which a library user is exposed. Reluctance to experiment with other tools may also result from past success with a limited search strategy. Most students find something on their topic in the card catalog and are therefore not inclined to believe their methods are ineffective or misleading, or that they are simply circumventing the complexities of the card catalog. Most users require little of the system. They develop only a limited view of what is available in the library because this limited view usually satisfies their needs. When students get good grades on basic assignments by using only the card catalog, they may never learn to search topics systematically, which is a much more important skill. They continue to pursue search strategies that do not require full use of the library's information retrieval system.

This perception must be dealt with by a coalition of librarians and instructors who develop library assignments. When doing library assignments, students may feel that the librarian makes easy assignments hard by directing them to search for more material than they need or can handle, while the librarian's common reaction is to provide exhaustive coverage of a topic and allow the student to evaluate which materials should actually be used. Librarians and instructors should work together to decide what library assignments should be teaching students about their topics and about library use and research methods.

Most students know (to a certain extent) what the card catalog can do, but many do not understand its limitations. Among these limitations are:

(1) Many card catalogs do not contain all materials in the library system, such as maps, slides, non-print materials, government documents, vertical file materials, newspapers, and some periodicals. Signs, guide cards, handouts, and lectures can direct users to methods for finding these excluded materials, but these can help only if the user realizes these types of materials may be useful within the context of a search for topical information.

(2) The card catalog also does not identify parts of works or subjects of parts of works. Collected works are accessible only through indexes, which few students use. Students need course-related or elementary bibliographic instruction to learn about indexes and the cross references, related, and umbrella terms used in the Library of Congress Subject Headings. Understanding index and bibliography notes on cards would also be useful for users.

(3) The card catalog does not rank or rate materials by quality or validity. Inclusion of a title in the library may lead students to believe that all titles are equally "good" and authoritative, while many in fact are outdated and contain inaccuracies. Helping students to discriminate between titles is an important part of the educational process and cannot be done simply by date, because landmark works in a field may not be those most recently published. In order for students to learn how to think critically, they must learn to use reviews, subject bibliographies, guides to the

literature, and histories of a discipline. This should be an integral part of the educational process and should not be the sole responsibility of bibliographic instruction librarians. It is essential to remember that the card catalog does not assist in this educational process.

(4) Subject headings are not perfect, are not in the natural language of the user, and may use outdated vocabulary. Students must think creatively to invert subject headings, find applicable terms, and learn to read the tracings on cards of related titles. They may be reluctant, however, to look at broader subject terms that do not relate exactly to their topic.

(5) The card catalog also does not indicate if a book is charged out, missing, at the bindery, or available. Since most students know what the card catalog does, it is sometimes helpful to emphasize what it does not do.

According to the ACRL Bibliographic Instruction Handbook guidelines, students should be able to identify parts of a card, identify items in a subject, use the Library of Congress Subject Headings, know the filing rules, and be able to locate items in the card catalog. After Earlham freshmen go through a required bibliographic instruction assignment, they receive instruction through particular course-related assignments. Although students are taught the mechanics of the card catalog and its complexities and discrepancies, we try to correct their overdependence on the card catalog, and a primary thrust of the program is teaching them when to use the card catalog as one part of a total search strategy.

Students, then, depend too much on the card catalog now. However, the potential for overdependence on online catalogs is far greater. There are so many additional access points and features to most online catalogs that students will be even more impressed by its power than they are now, and acknowledge even less its limitations. Most online catalogs have many of the same shortcomings as traditional card catalogs. Unless students learn to take those shortcomings into account -- by better bibliographic instruction -- the online catalog may be counterproductive in our efforts to teach students how to use the library effectively.

DISCUSSION HIGHLIGHTS

It is important that course-related library instruction with assignments be an integral part of the curriculum of each teaching department to insure proper use of the online catalog, unless it is possible to guide users through a search strategy using online prompts and help messages.

It is not the responsibility of librarians to find all material or the best material on a subject, but it is their responsibility to teach students to do just that. Overconfidence in the automated catalog may lead students to do less searching. The users' blind faith will remain unless the terminals can tell users when they are in trouble. Terminals in remote locations or accessible through dial access ports are another problem, since they are not located near library staff who would normally assist users with searching difficulties.

Surveys, questionnaires, and transaction logs are valuable tools in evaluating how patrons actually use the online catalog. For example, we know users leave if they do not find any titles under their subject, but we do not know if they were using the correct subject heading.

Nonusers have indicated in surveys that they felt they could learn to use an online catalog in about fifteen minutes, yet they have not been motivated to take the time. Only by using graded assignments and exercises can students be motivated to use the library system and use it correctly. Their primary concerns are getting a good grade and finishing coursework. Library instruction in the college setting must be tied to these concerns.

III. THE NATIONWIDE COMPUTER CATALOG STUDY: TRAINING ISSUES

by Douglas Ferguson, Stanford University Libraries

In the Nationwide Computer Catalog Study, 8,000 patrons who used computer catalogs completed a fifty-nine-item, self-administered questionnaire. Another 4,000 patrons who did NOT use the computer catalogs available to them completed a sixteen-item questionnaire. In thirty minutes, I cannot cover many of the fascinating things they told us. Instead, I will focus on selected findings pertinent to training concerns and issues.

I am not a bibliographic instruction expert, and so I reviewed the study to see what was pertinent to training. As it turned out, it seems that nearly everything is pertinent. To limit it somewhat, I looked for what might be relevant to formal user education, the structured presentation of material by a teacher, usually to a group and usually at a scheduled time. This is the library skills course, the Bibliography I course or the library research methods course. There are others, of course, who assert that everything we present to the library's clientele, every contact we have with them, is teaching in one sense or another.

Personally, I am sympathetic to the more inclusive view of training, and most of the following reflects that broader view. What people learn in and about any organization is intimately influenced by all the contacts and experiences they have with it. That is why each of us should view every public contact as an unavoidable opportunity to explain the uses, benefits, and payoffs available through libraries. For this occasion, however, let's restrain ourselves and consider findings from the study that pertain to formal courses, single-meeting orientations, library tours, and search assistance.

Let me begin by mentioning a few convictions that some people might call biases. Relatively speaking, I think, training library users is not critically important. It seems to me much more important to organize the library in such a way that our users can readily teach themselves. More important than training others is learning as librarians how creatively we can simplify our libraries so that people can accomplish whatever they wish to do without having to come to us for help most of the time. Learning never stops, whether or not there are teachers, courses, or instructional materials. Given the choice, most people teach themselves what they believe is enough, sufficient for what they want to do. They cheerfully ignore any professional or expert standards we may try to set for them, so long as they can get on with their own activities. Those who do not learn enough find other acceptable ways to get what they want, or at least to seek it.

There is a fundamental point here, I believe. Failure is not something that originates with our users who cannot find what they need in our libraries. Rather, failure is something that arises out of our own inability to organize and allocate our resources well enough.

So much for my biases. Let me now briefly summarize findings from the Nationwide Computer Catalog Study, beginning with a hasty sketch of computer catalog users and nonusers. Both groups have things to teach us as trainers.

Users in our sample were people actually working at computer catalog terminals when we intercepted them. They agreed to complete our fifty-nine-item questionnaire after they had finished at the terminal. In contrast, our nonusers were people we intercepted inside the main entrance of a library and who, when asked, said they had never used a computer catalog. We took their words for it.

You might suppose that users and nonusers are very different sorts of people. Our data, however, do not support that proposition. Users are slightly more often male than nonusers, and nonusers are on average slightly older than users. But those differences are slight. I think they will even out over time, and I doubt if the differences we found are significant.

Users in our samples tend to come from the humanities and social sciences, while nonusers tend to come from the health sciences, business, and law. Our two groups had roughly the same numbers of persons from education, the physical sciences, and the biological sciences. It is likely that these differences may result from how terminals are distributed in branch libraries and how long they have been in place. There is no strong evidence from the study that one discipline is more or less congenial to computer catalog use.

If there is a striking difference between users and nonusers, I suppose it must be in their information-related behaviors, as might be expected. On the whole, computer catalog nonusers process much less information than users, regardless of the medium. Nonusers visit libraries less often, and they have less computer exposure than users. When nonusers do visit libraries, they consult the catalog less often than users do. In other words, nonusers need encouragement in all areas of library use and not just in using computer catalogs, because print information processing is neither easy, enjoyable, nor rewarding for them.

SOME RELIABLE ASSUMPTIONS FOR TRAINING PURPOSES

When developing your computer catalog training strategies and plans, what is fair to assume about your prospective learners? Perhaps the most important and useful assumption you can safely make, based on our study findings, is this one: *Most of your clients will have positive attitudes about the computer catalog as a library tool*.

Our findings on this are singular:

- 92% have a VERY (67%) or SOMEWHAT (25%) favorable opinion of the computer catalog.
- 80% find some part (MORE 17%, ALL 28%, SOME 40%) of what they look for in computer catalogs.
- 92% say the computer catalog is BETTER (75%) or EQUAL TO (17%) the card catalog in quality.
- 50% of our users found useful material they weren't looking for.

What is really surprising is that the aura of bibliographic goodwill that surrounds the computer catalog extends to nonusers as well. In our study, 89% of all nonusers have a very favorable or somewhat favorable opinion of the computer catalog, while 93% believe the quality of the computer catalog is equal to or better than that of the card catalog.

In planning training strategies, then, count on your trainees meeting you more than halfway at the outset. Also, count on their getting useful results from the computer catalog. In the study, 45% of our users said they found either MORE THAN they looked for, or at least ALL that they sought. Another 40% reported that they found at least SOME of what they wanted, while only a modest 15% found nothing. In a separate question asking about search satisfaction, 80% said they were either VERY or SOMEWHAT satisfied.

This is a marvelous gift horse, but we had better stop a moment and look it squarely in the mouth. Nothing, not even a computer, can deliver that well. The study doesn't actually establish why people feel so satisfied with the computer catalog. But I personally suspect the answer lies in the perceived utility of the card catalog, with which the computer catalog is compared. If the file is large enough, as in many libraries, computer searching will nearly always be, or at least seem, quicker and easier than manual searching in a card file.

In the first place, we did find strong evidence that how much a user found heavily influenced the degree of satisfaction reported. And computers, of course, are very good at delivering a lot of information.

Secondly, we found that search satisfaction is high for first-time users, falls off substantially for infrequent or occasional users, then increases again for frequent computer catalog users. The implications here are interesting, if perhaps impractical. For example, since nonusers are favorably predisposed to computer catalogs, perhaps you should never install one! Or, if you do, let people use it only once. Or, alternatively, require them to use it once a week under the threat of otherwise losing their library privileges.

At this point, let me make a further observation about nonusers and the favorable attitudes they bring to the computer catalog. One of our study objectives was to search for ways libraries can extend computer catalog services to people who do not use them now. Remember, we found that nonusers of computer catalogs are less frequent users of libraries in general. Perhaps we can build on this positive image they have of computer catalogs. Perhaps we can use this as a hook to get them not only to use the library more, but also to use it more effectively. Remember, too, that our nonusers have less experience with computers than users. So, if you do plan training for first-time users, probably you will need to plan for a great deal of actual hands-on training.

Something else you can assume in planning training is that your learners will represent a cross section of computer expertise. Many nonusers, as we have said, will have only a limited knowledge of computers. But, overall in our study, about one-third said they use computers often, another third said they use them occasionally, and the remaining third said they almost never use computers. This suggests to me that strategies based on peer teaching may be effective -- those who know more can help those who know less about computers. In fact -- and here I reveal another bias -- anything that promotes peer teaching is worth exploring.

At this point, we have an excellent example of how nearly every dimension of the study bears or may bear on training concerns. If in fact you want to plan for peer teaching, then you will want to consider having your terminals clustered near each other, so that users can observe and learn from each other. Clustering terminals at high-traffic locations can also attract new recruits for training. In the study, two-thirds of our respondents said they first became aware of the computer catalog when they noticed a terminal in the library. So much for the power of library publicity and word of mouth for getting the word out. Clustering terminals is a matter of trade-offs, of course. People also want ready terminal access, wherever they may be. Even so, this point reminds us of an old marketing adage well known to Standard Oil and McDonald's -- organization produces, location sells.

WHAT LEARNING MATERIALS ARE MOST USEFUL?

We asked our respondents to select the service improvements they most wanted libraries to make, from a list of nine choices. Let me run through the list:

- Instruction manuals available for purchase. Not a winner. A mere 8% of our respondents selected this one.
- Training sessions or slide/tape/cassette training programs. Two more unpopular choices: only 14% and 11% respectively chose these.
- Printed aids, brochures, charts, signs. Here we enter real payoff territory. Substantially more than half of our users told us they use printed instructions, even in those cases where they also received staff assistance or online help. Well-designed printed aids should be an excellent front-end investment. I urge you to acquire professional-quality graphic and editorial assistance, whether within your own organizations or purchased from outside suppliers. It is well worth it. Concise instructions, attractively packaged, save time for everyone. And at least some of your printed aids should be problem/task oriented. You know: "When this happens, you do this to go on. If you want to do this, do this...."
- The demand for more terminals -- lots more -- was by far the desired library service improvement most often selected. This has cost, design, planning, and implementation implications across the board, of course. With respect to training, the implication seems to be: Training is a pretty low priority, so long as we cannot get access to a terminal. If the problem is access, users do not know how much training they may need about what -- nor do they care.

WHAT SHOULD BE TAUGHT?

The easy answer, of course, is everything. But when one must set priorities -- as we always must -- things are not so clear and simple. Still, the study does give us some guidance:

- Scope and contents. Just as in the card catalog, people never stop to realize what is included and excluded in the computer catalog. They must be told, then reminded again and again and again... Actually, the problem may be even more serious in the computer catalog, because of the cultural myth that "computers always know everything."

- Subject search capabilities. It will hardly surprise you that users report having problems when they try to make subject searches. But here, again, the problem may be even more serious with the computer catalog than it is with the card catalog. Why? Because our study established much more frequent subject searches than indicated in earlier surveys. Some 60% of all users arrived at the computer catalog with some sort of subject-related information, while 50% actually used such information in searches. Asked to select from a list of fifteen items representing software or searching capabilities, respondents chose these three most often:

  (1) "Ability to view a list of words related to my words."
  (2) "Ability to search a summary or contents page of an item."
  (3) "Free text, word-by-word subject heading access."

- Searching skills, emphasizing subject searching. Two points are of particular importance:

  (1) SEARCHING MULTIPLE INDEXES. More than 30% of users reported searching more than one index in a typical search.

  (2) REVISING AND IMPROVING SEARCH RESULTS. Users have difficulty figuring out how to increase or decrease whatever they come up with on their first search. They need to know how they can easily increase or decrease the results of a prior search. People need to be taught how to develop subject terms which will broaden or narrow the scope of their searches. They need to understand how to apply their own minds, the computerized system, and the subject heading lists -- in that

order of priority. We must teach them how to create searching term maps. As trainers, we must advocate getting authority lists online, lists with built-in semantic references.

- System limitations. Trying to make a system do something it can do only poorly, if at all, is guaranteed to decrease user satisfaction. For example, we found that people have less trouble finding the correct subject term, scanning long displays, and increasing search results if the system includes a printer. If it does not, users should know that the problem is a system limitation, not their own lack of knowledge or experience.

CONCLUSION

Training often is thought of as something that is developed and implemented only when the system is about to be placed in service. That probably is always a questionable posture, and it certainly is in the case of computer catalogs. I mentioned the matter of systems limitations just now. Earlier, I pointed out the training relevance of terminal concentration or dispersal. No amount or quality of training can make up for a system that is inaccessible, too complex to use, or suffering from an inadequate database. For what it is worth, here is my personal set of priorities for any computer catalog:

1. The most comprehensive database possible.
2. As many terminals in as many locations as you can afford.
3. An instruction program, which includes: on-demand assistance at the terminal, scheduled sessions, signs, command charts, and brochures.
4. Expanded searching capabilities.

These are my personal priorities, based on what our study respondents reported from their experience with state-of-the-art computer catalogs. If we consider pure nose counting, database size and terminal availability should have the most support of all.

Mind you, I am NOT saying that today's systems are as easy to use as they should be or could be. I am NOT saying we shouldn't prepare ourselves for the computer-based instruction era. (Microcomputers should be exploited to the limits.) I AM saying that user friendliness and computer-assisted instruction are not high on our users' agendas. What they want is straightforward: access to any system that will get them into any database that approximates the library's total contents.

An effective teaching program can be and should be a fundamental component in the computer catalog design and enhancement process. Everything you learn in spot trouble-shooting and in developing instructional and informational materials should be clearly and aggressively communicated to the system design team. The team needs to hear early, often, and forcefully about every system glitch you find -- and what you learned about how to get around it.

With effective communication and cooperation between library management, reference and technical service staffs, and systems designers, there is every possibility that public online catalogs will grow over time to better serve the instructional, research, and learning needs of the library's clientele.

DISCUSSION HIGHLIGHTS

Online catalog studies monitor what people say they do as opposed to what they really do. Transaction logs can be used to monitor actual transactions with the online catalog.

There is a lack of credibility between online catalog users and systems staff. Data from libraries indicate that certain types of errors are being made by users, but system designers sometimes refuse to believe that these are system-related problems. Perceptions of staff and library users also differ.

Giving system enhancements and enlargement of databases higher priority than training programs is not constructive; it encourages librarians to believe that these three programs are competing for the same dollars. This may lead administrators to discontinue support for necessary teaching programs if they feel the system should teach itself. Reference staff have been closely involved with teaching the online system; in the process they have maintained contact with users and have suggested appropriate system upgrades. Training should be taken out of the budget priority list for automation and should run parallel to it.

Training is not as significant as access to terminals. Emphasis on systems rather than training enhancements may be a reflection of the separation of bibliographic instruction from the library. Systems can be used as one training option as well as for teaching and instruction.

There is a debate over what we want to teach users about the online systems. Some institutions want users to know how to retrieve information procedurally, while others feel it is more important for users to understand a search strategy separate from online searching techniques.

IV. PSYCHOLOGICAL FACTORS IN ONLINE CATALOG USE, OR WHY USERS FAIL

by Christine L. Borgman, Stanford University

Recent empirical research on the way humans interact with computers has revealed a number of factors that are relevant to the use of online catalogs in libraries. These studies have focused on the way people understand, comprehend, or reason about complex mechanisms such as computers. The ultimate goal of such research is to design systems and train people to use them based on the way that people think about such systems.

MENTAL MODELS THEORY

One of the interesting theories emerging from this research is that people may build "mental models" of complex mechanisms. A mental model is a qualitative simulation of system behavior which can be "run" in the mind. Such models appear to be useful for determining methods for interacting with the system, for place keeping, and for debugging errors. A mental model is unique to the individual and may be anything from a very abstract mechanical description to a very tangible, concrete view of system operation. Models vary in complexity and tend to develop in detail as familiarity with the system increases.

A person with a mental model of a system has a conceptual understanding of the way the system works. A conceptual understanding can be contrasted with procedural knowledge of the system's operation. A person with only procedural knowledge has learned a set of rules to apply in interacting with the system, but has not organized these rules into a related framework for the system's functional operation.

Effects of a mental model

Early results suggest that people with mental models and people with procedural knowledge perform equally well on simple, procedural tasks, which require only the basic rules of system operation. On more complex tasks, which require a combination of procedural rules or some extrapolation from the rules, people with mental models appear to perform better. Those with mental models also have less difficulty debugging errors, as their conceptual understanding helps them to generate alternative methods of interacting with the system. In an online catalog, for example, the person with the mental model may perform better at tasks requiring multiple indexes or Boolean logic and may be better able to locate alternative paths when no results are found.

Adopting a mental model

We suspect that people are more likely to develop mental models of a system under certain conditions of training and system use. A person trained with a conceptual model is more likely to develop a mental model than a person trained only with procedural rules. Conceptual training is usually done with either an abstract model (such as an inverted file structure description of an information retrieval system) or an analogical model (such as a card catalog or a file cabinet description). The abstract model has the advantage of accuracy; the analogical model has the advantage of familiarity.

There is some debate over whether a person will develop a mental model if not trained with one. Some researchers suggest that people will usually develop models, though if not trained with a correct model, they may develop one that is incorrect. An incorrect model may cause more harm than good in interacting with the system. Other researchers suggest that a person may not make the effort and will have at most a vague sense of the system's operation.

Another factor in adopting a model is the nature of the system itself; some systems may be easier to model than others. It is probably easier to develop a mental model of a system which has been designed within a consistent framework, and whose interface reflects the system's behavior, than one which has been designed piecemeal, or in an inconsistent manner.

Interference from other models

Another factor which may affect the adoption of a mental model is interference from previously held models. An individual may impose a model of a similar system onto the new system. Research on mental models of word processing systems has shown that good typists frequently impose a typewriter model on a word processor, with mixed results. Typewriters and word processing systems are sufficiently familiar that the transference is useful, yet problems occur when the wrong features are mapped over. Users who impose the typewriter model may have difficulty with features that do not have a counterpart in the typewriter, such as insertion and deletion of text.

In an online catalog, a person may transfer a model of the card catalog to the new system. The card catalog analogy may make it easier to understand features such as separate indexes (the divisions of a divided catalog), but may make it difficult to understand features such as Boolean logic and key word searching. Further, though most library users probably have some model of a card catalog, it may not be a correct one. Mapping the inaccuracies of one's own card catalog model directly to the online catalog may have disastrous results.

Individual differences

The research performed to date on mental models has been done within the framework of cognitive psychology, which is the study of the way humans process information. Cognitive psychologists are interested in the aspects of information processing common to all humans, without regard to differences between people. Other disciplines of psychology acknowledge such individual differences, and suggest that some people may be inclined toward conceptual thinking and others inclined toward procedural thinking. If this is true, then training people with a conceptual model of the system may work better for some groups than for others. The individual differences aspects of mental models have not yet been studied, but it is a rich topic for future research.

EXPECTATIONS FROM THE SYSTEM

Another aspect of interference effects is a person's expectations from the system. Users interact with a system based on what they expect it to do, and will judge its usefulness accordingly. If they think of an online catalog as a computerized card catalog, they may bring along a host of expectations, such as thinking it will do everything the card catalog will do, and more. They may assume it contains all of the library holdings, and has better subject access -- if they search under the wrong heading, the computer should give them the right one, for example. This problem falls under the heading, "do what I mean, rather than do what I told you to do" -- a frequent misconception on the part of novice computer users. Further, they may not recognize that the online catalog is limited to data retrieval -- matching specific terms given against terms in the file -- and is not a "question answering" system. If the system is not what people expect, they may fail to use it correctly (out of lack of understanding of its capabilities) and may be disappointed in it, even if the system is functioning optimally with respect to the capabilities for which it was designed.

RELATED COGNITIVE ISSUES

Short-term memory

One aspect of human cognitive capability that arises in studying human-computer communication is short-term memory. A person can store roughly seven, plus or minus two, "chunks" of information in short-term memory for a few moments. The important information may be moved to long-term memory for storage, and the rest is lost. A chunk of information is one meaningful unit to the person -- one nonsense syllable, one word, perhaps one sentence. The size of a chunk is partially dependent upon familiarity with the information. The positions of pieces on a chess board may be one chunk to a chess master and many chunks to a novice, for example.

A screenful of information may contain many chunks of information. Some of it is descriptive information (such as a record listing) and other parts may be functional (such as command options). The way most systems are designed, once the user moves to the next screen, all the information from the previous screen is lost. However, the information displayed may depend on choices previously made and on other information which has already been lost. In this way, systems frequently overload short-term memory. That first screenful of information may be a manageable number of chunks to someone very familiar with the system, but an overwhelming amount of information for a novice user.

Getting lost

A related cognitive issue is a person's ability to keep track of where he or she is located within a system. A system which overloads short-term memory and leaves few indications on the screen of the current location may leave a person wandering aimlessly around trying to figure out where he or she is located in the system. Systems which use "signposts" indicating the current location, how it was reached, and the next options are less likely to lose people. Without some signposts, lost users may generally panic, push buttons at random, and quickly run through as many alternatives as possible in an effort to find a familiar point in the system.

Einstellung effect

Once people develop some basic skills at using a system, they may restrict themselves to these methods, even when inefficient, rather than invest the mental energy in learning new ones. This tendency is known as the "Einstellung effect." An example of the Einstellung effect in text processing systems is the user who makes the same modification to a series of lines, one at a time, rather than learn to use a global change command. Similar behavior is exhibited in an online catalog by the user who will page through a very large document set rather than learn the logical commands to restrict the set.

Language

The language used in system commands and documentation may also interfere with a person's processing of the information required to learn the system. The common terms used in systems, such as "command," "enter," and "file," may have very different connotations for a novice than for a sophisticated computer user.

PERCEPTIONS AND FEARS OF THE SYSTEM

People sometimes bring negative perceptions of computers in general to their interaction with the system; these perceptions can become psychological barriers to effective use. People unfamiliar with computers often have a fear of hurting the machine; they see it as an expensive piece of equipment and they do not want to be responsible for damaging it. Sometimes they are also concerned that the system will retaliate if they do something wrong. The unfriendly dialogue and impolite (and unhelpful) error messages provided by many systems contribute to such a perception.

When an online catalog replaces a card catalog, people may perceive that something has been taken away from them. The card catalog is a familiar entity found in almost all libraries. They may also resent the fact that the presence of a replacement system requires them to learn new skills. Further, skills on an online catalog are less transferable than card catalog skills, as the systems in individual libraries may be quite different.

Perceptions of the system may vary by age level and by status. Young people and students are usually the most eager to try new tools and tend to be the least resistant to change. Older people are sometimes more resistant to change and may perceive the system as threatening to their status, such as the professor who does not want to appear inept in front of his or her students, or the librarian who views the keyboard skills involved in computer use as a clerical task below the station of a professional.

ERGONOMICS

Ergonomics, or the design of the equipment and workstation for human physical use, is also a consideration in the usability of computer systems. Terminals should be located at a comfortable height for typing, with some stationed for standing use and some for sitting use. Standing terminals support high-traffic use, while sitting terminals support use by children, by people in wheelchairs, and by those with a need for a long interaction with the system.

Care should be taken that the terminals and lighting are positioned to minimize glare on the screen. Terminals with adjustable angle screens and movable keyboards are most flexible for a diverse population. Adequate space next to the terminal is especially important for online catalogs. If printers are to be used with terminals, they should be soundproofed, or located away from public areas. If the online catalog is physically uncomfortable to use, people will be less likely to use it, and will be less satisfied with its performance.

IMPLICATIONS FOR DESIGN AND TRAINING

The psychological considerations outlined above have a number of implications for design and training, which are outlined here.

Design

(1) Design around a conceptual model. Start with some consistent model for a system and derive the methods and the language for interaction from that model.

(2) Be consistent in semantics and syntax. Avoid ambiguous terms and instead use terms which are clear and consistent. Make features consistent, even if not optimal for systems operation. For example, don't use a 5,4 search key for author and a 6,3 search key for title. Users will remember a nine-character search key but not remember which is which. Make the syntax the same for paired commands, such as logon/logoff, print/display, etc.

(3) Make the location in the system explicit. Show the user the previous location and the present location, and indicate the options for future locations. Such an indication will minimize "lostness," make the system seem more friendly, and increase confidence in the system.

(4) Design uncluttered screens. Data elements should be clearly labeled and easy to locate, which will reduce the load on short-term memory.

(5) Avoid long, unsorted displays. Don't force the user to browse through long displays arranged in no apparent order. Sort records alphabetically, or by date. Provide commands to limit the set by useful parameters, such as owning library, date of publication, or language.

(6) Make error messages friendly and diagnostic. Don't just tell the user that he or she made a mistake; the user probably knows that. Rather,

indicate what the error was and, to the extent possible, what he or she can do to correct it. At minimum, provide a brief list of valid options.

(7) Provide help messages on request. Both general and specific help are needed. Allow the user to type "help" to obtain a general message listing available options. A specific help request, such as "help author," should obtain a response indicating the appropriate semantics and syntax for that option (such as the exact form in which to enter an author search).

Training

(1) Train around a conceptual model. The model should be a brief introduction to the system. If properly done, a conceptual model may require no more than a page or two of description. It should be easy to understand, accurate, and a helpful representation of the system. If an analogical model is used (such as a card catalog model for the computer catalog), be careful to explain both the ways the system is similar to the analogical vehicle (the card catalog) and the ways in which it is different. Making these distinctions should minimize incorrect mappings from the analogy to the system.

(2) Be aware of user expectations. Explain the system based on its own capabilities, and note explicitly what it can and cannot do. In this way, people may be more likely to judge the system and utilize it based on its true capabilities rather than on incorrect attributions.

(3) Be aware of user fears and perceptions. Acknowledge that fears and perceptions exist and deal with them directly; legitimize them. Do not ignore such fears, as that may only reinforce them.

(4) Do not represent the system as more or less than it is. Online catalogs offer many advantages over card catalogs, but they are not a panacea

for information retrieval. Many problems (such as vocabulary control) remain, and it is not fair to the user to suggest that the system has more capabilities than it does. Do not denigrate the system in an attempt not to overplay it, however. Present the system to the user as objectively as possible.

DISCUSSION HIGHLIGHTS

(1) Standardization. Many different systems are in use in libraries, and making the transference from one to another may prove difficult for many users. Certainly there are more differences between online catalogs than between card catalogs. After learning one system, the first use of a second or later system may be fraught with interference effects. Once a person has learned the new system, he or she may have no more problems than if it were the first system learned. The most difficulty occurs when a person has to use several different systems intermittently, as no single system is used often enough to maintain mastery. Some relearning occurs every time a person changes systems. If systems become more standardized, interference effects may become less of a problem.

(2) Multiple conceptual models. If a person has a mental model of one system, then he or she can generate the needed methods for using that system and therefore may have fewer problems moving between systems than the person with only procedural knowledge. The person with procedural knowledge of multiple systems is more likely to confuse the commands needed on different systems, due to the lack of a framework for each system.

(3) Representing the system to users. If a choice must be made, it is probably better to represent the system as less than it is, rather than as

more than it is. Users may become less frustrated from heightened expectations and, when they encounter the additional features, may be that much more satisfied.

V. DESCRIPTIONS OF CURRENT ONLINE CATALOG USER TRAINING PROGRAMS

Representatives of nine online library systems summarized in-house user training and instructional programs at their institutions. Most presentations included background information on the nature, scope, and size of the system and the philosophy of instruction at their institutions. Some included dial access demonstrations of their systems (Northwestern's NOTIS and LUIS, the University of California's MELVYL, and the Library of Congress' MUMS and SCORPIO), and others showed instructional videocassettes produced in-house (Pikes Peak System and Iowa City Public Library). Most presenters distributed printed handouts and brochures used to help users with their systems. Such handouts are listed in Appendix C, along with other items made available at the conference. (Editor's note: While this report was being prepared, the Association of Research Libraries' Office of Management Studies issued a 109-page SPEC Kit of materials used at some libraries for instructing users about online systems. SPEC Kit #93 is entitled _User Instructions for Online Catalogs in ARL Libraries_.)

In this chapter, presentations have been condensed to varying degrees (with the assistance of the presenters), but an effort has been made to retain the unique approach and philosophy of each system. Reports include coverage of the different ways users have been introduced to the online catalog, diversity of ongoing instruction programs, types of online instruction provided on some systems, and the various ways library staff and volunteers ("liveware") provide assistance to users.

Following these presentations, several systems (identified in the agenda, Appendix B) were demonstrated. Participants had an opportunity to try out various features of these systems.

A. Northwestern University

by Brian Nielsen

A critical issue being considered by academic librarians is the definition of the boundaries of the currently popular topic of bibliographic instruction. A small group of bibliographic instruction librarians, convened as the Bibliographic Instruction Think Tank in the summer of 1981, drafted a report published in College and Research Library News (42:394-98, December 1981) that challenged the field to cease thinking of bibliographic instruction in the narrow sense of what reference librarians do in their spare time. In that document an argument was made that teaching students how better to utilize libraries involved activities beyond simply teaching as it is traditionally conceived; bibliographic instruction actually involves a host of complex and interrelated issues, from the design of library buildings to the way librarians relate to faculty, and even the controversial issue of reevaluating the place of reference desk service in the larger context of library public service.

My remarks this morning serve both to extend some of the ideas growing out of the Think Tank as they apply to instructional design issues in teaching the use of *any* online catalog, and to provide an overview of what we have been doing at Northwestern University over the past three years in online catalog instruction. My more general comments will focus on the distinctions between *learning* and *teaching* by outlining four aspects of a generalizable "learning environment". Following that, I will describe briefly the NOTIS (Northwestern Online Total Integrated System) system and its public catalog component, LUIS (pronounced LEW-iss, for Library User Information Service), as a prelude to providing a more detailed overview of our instructional program.

The value of the concept of a "learning environment" stems from the attention the concept draws to instruction as an activity involving the creation of various options for student learning, rather than as simply the act of teaching. This conceptualization avoids the dangerous error of seeing students as passive objects, as vessels waiting to be filled with "knowledge". Speaking of the "learning environment" also leads to the recognition that learning may occur anywhere, not simply in a controlled classroom, textbook, or reference desk situation. Learning does not necessarily take place only in a lecture hall. Learning can occur at any time, with or without a teacher, with or without a design of what is to be learned. Environments, especially in libraries, are often designed without taking into account the implicit statement of instruction given to library users.

Placing the card catalog in the most central part of the library is an implicit statement to users, indicating the card catalog's primary importance and centrality to library research and operations. Since this may no longer be the case in an online library system, users are unintentionally being given incorrect information. This example illustrates the need to focus our thinking about library instruction on all phases of library environmental design.

We may define four elements or aspects to the learning environment for library user education. First, there is what I will call the embedded environment of a system itself. A system designed for patron use has a logic that is exhibited to some degree through actual use. For an online catalog, this "embedded" environment is what the user sees on introductory screens, prompts, and error messages, as well as the user's perception of the structure of the retrieval system.

A second aspect of the environment is the "incidental" learning environment, or some learning feature that may be injected into the situation at the "point of use instruction" by reference librarians, such as the act of describing a tool's use as it is handed across the reference desk or the provision of a sign next to the Reader's Guide. But also conceptually included within what I call the incidental environment are such incidents as students teaching other students, and the difficult problem of coping with conflicting user demands when trying to teach across a reference desk.

A third element of the learning environment is the "orienting" environment, which refers in part to traditional library orientation as an element of teaching library use. With the double meaning of the word, however, I intend orientation also to include the attitudes of users toward the environment they find in the library. Such orienting attitudes may involve attitudes about the computer, as well as attitudes about librarians, information retrieval, and so on.

The fourth aspect of a learning environment is systematic instruction, within which I intend to include teaching as traditionally conceived, but also any static but significant aspect of the environment of which the learner has taken cognizance. Any aspect of the user interface that is not examined to determine how well it is working is not changed, and as unchanged becomes a part of systematic instruction. It is systematic instruction whether or not it is intended as such. Especially with a transient student population, misinformation, conveyed by a poorly designed floor plan or by academic policies or actions that belie the central role the library plays in liberal education, is actually a form of systematic instruction. Librarians concerned with good instruction must be attentive to evaluation of all library operations as a corrective mechanism.

These four aspects of the learning environment -- embedded, incidental, orienting, and systematic -- must all be given consideration if a library user education program is to be successful. I will now go on to describe our situation at Northwestern, first providing some background on our online catalog and the larger NOTIS system, of which the LUIS catalog is a part.

NOTIS development began prior to 1970, and the first project was the creation of an online circulation system. In 1970 work began on the MARC-based bibliographic system, including cataloging and acquisitions functions. LUIS became available to our users in the spring of 1980 as an author/title catalog, with subject access added in early 1982. It is a command-driven system with author, title, and subject searching capabilities explained by a variety of introductory and help screens. The system is designed to provide ease in use, and simultaneously to run very efficiently. The single-letter mnemonic commands "a=", "t=", and "s=" (for author, title, and subject searches respectivley) are used to initiate all searches. There is no key word searching, use of Boolean operators, or use of cross-references in the file at this time. (We currently have over 50,000 authority records in an online file available to staff, but the integration of these records into the bibliographic file is still in development.)

Subject access is strictly by Library of Congress subject headings, occasionally prompting the charge that LUIS is a "card catalog on wheels." I would dispute the charge, but have to admit the epithet is expressive of the catalog's retrieval logic. I'd prefer to use the analogy suggested by Ivan Illich -- "a bicycle, not a jet" -- because it connotes a technology whose very simplicity is a part of its effectiveness as a user-friendly system.

The full bibliographic record display is very close to a card-image format, and the file now contains over 600,000 bibliographic records, including records for virtually all serials in the main collection, plus monographs processed since 1970. LUIS terminals are available in a cluster by the information desk just in front of the main card catalog, in another cluster down the hall, and in several other places around the library system. Free dial access is also available. Users and staff alike are enthusiastic about LUIS.

The initial design philosophy for LUIS was to have all instruction available in the system itself, through introductory and help screens, but as more public service staff became involved in encounters with users of the online catalog, the design of instruction not on the terminal screen took on greater importance. It was decided that although the screens should be clear and enhancements should be made for easier patron access to the system, the screen itself was only one aspect of the learning environment and was too limiting for all instructional purposes. Users should have a choice of learning methods. Although some think instruction screens are too wordy at present, such screens do provide users all essential information about the system. All the introductory and help screens currently in the system were written by a Design Group, chaired by our Assistant University Librarian for Public Services.

To accommodate perceived instructional needs, a variety of projects have been undertaken over the past two years. We began with providing extra assistance at the public terminals, and soon thereafter included a brief informal demonstration at the public terminals in each of our graduate student tours. We have also provided instruction to various faculty in their offices via dial access using a portable terminal. We began experimenting with the use of large video monitors in a classroom building not far from the library to demonstrate LUIS to larger groups of students and faculty in the spring of 1982, and at about the same time started looking at our transaction logs, which automatically record user behavior with the system. By the summer of 1982 we had acquired three 26-inch video monitors in the library, and began planning what we have come to call our "LUIS Workshops". I would like to describe the content of these briefly, to show how we try to relate the instruction to the background the students bring to the learning situation.

Our LUIS Workshops are structured to take up slightly less than an hour's time, which includes time for questions and informal interactions. We hold them at the same hour every week, at a time announced via a flyer posted in various spots around campus; we have no signup procedure. A room just down the hall from Reference is set up with the video monitors connected to a terminal in the front of the room; the terminal is in turn connected by phone to the library's computer. The room also has a blackboard. We have had attendance ranging from two to a dozen students per session. Each session is conducted by a reference librarian.

We structure our sessions into two "units". The first unit is a presentation of concepts, relating the online catalog to the card catalog in order to take advantage of what the students may already know about catalogs in general. The LUIS and manual catalogs are compared in relation to four characteristics -- coverage (both type of material and dates), status as union catalogs, filing arrangement (we describe both as "divided"), and cross-reference provision -- as a means of sensitizing students both to the similarities of the two files and to the search strategies that must be adjusted depending on which file is approached.

The second unit is more of a "how-to" presentation, in which the monitors are used to demonstrate the format of various screens and provide various illustrations. It is in this second unit that we actively solicit student participation. Our first goal here is to demystify the system as much as possible -- to alert students to the online help available, to explain the role of the enter key, and to demonstrate that an error will not break the computer. From there we demonstrate the basic syntax of the system, using a number of carefully chosen examples. We focus here essentially on how to manage the size of a retrieval through the use of truncation, and how to manipulate the system to cope with a large retrieval. Because, as noted before, we have no cross-references at present, we then go into the use of the printed Library of Congress Subject Headings. LUIS has three instructional screens that deal with LCSH, including one that illustrates the format of the list; displaying these screens on the large video monitors eases somewhat the burden of this instructional task.

We close with time for questions, discussion, and the filling out of a very simple evaluation sheet (which needs revision). When we have done presentations to faculty groups, we have gotten very different kinds of questions than those from students -- questions that relate to online bibliographic systems in general, to financial support, and so on. We rely on the comments and questions we get to alert us to problem areas in our presentation, as well as problems with the system.

Besides this source of information for informally evaluating our instruction efforts, we have begun to use what we believe will in time become a powerful new tool for learning more than we ever knew before about how our patrons use the catalog. The NOTIS system, like a number of other online bibliographic systems, produces a transaction log that records every keystroke entered by every user at every public terminal. We developed the logging facility as a part of our participation in the Online Public Access Catalog Study funded by CLR, and have just recently begun examining paper printouts of the logs. We have learned some things that have influenced our LUIS Workshops presentations, such as the need to emphasize more than we ever thought necessary that initial articles are dropped in searching.

Such ongoing evaluation of our instructional efforts is important. As noted earlier, systematic instruction occurs whether it is intended or unintended. To avoid evaluation of a system or of an instructional program is to run the risk of systematic perpetuation of misinformation coming from somewhere in the environment.

While we are aware of the critical need for evaluation, and do some kinds of informal evaluation at present, in large measure we are still at the stage where we assume that if we tell our users something, they will know and understand it. That situation is inevitable at the beginning. We are aware of how dangerous that assumption is. Yet in the beginning, we learn by doing and exploring, and we cannot be so concerned about rigorous and systematic evaluation that we fail simply to try new things. Data retrieved from a questionnaire that is not well-constructed, it must be realized, can lead us down fruitless paths, because the "meaning" of the data may be predetermined by the structure of the questions and/or erroneous assumptions about what precisely is to be evaluated.

In summary, Northwestern has tried to mount a diversified approach to instruction in online catalog use. Such diversification is important if all aspects of a multifaceted learning environment are to be managed for maximum instructional effectiveness.

DISCUSSION HIGHLIGHTS

One of the major problems for users is in the incorrect use of truncation.

Dial access alters incidental instruction. Remote users need to know the hours the computer is accessible and specific information on how to access the system.

Approximately 300 flyers were sent to dormitories to advertise LUIS workshops. Attendance has been about ten to fifteen students per workshop.

B. Mankato State University

by Sandra Ready

Mankato State belongs to the Minnesota State University System Project for Automated Library Systems (MSUS/PALS) online catalog access system, with the central computer located at Mankato State. The online catalog has author, title, and LC subject searching available, as well as key word (term) and combination author/title searching. Initially, the online catalog contained everything the card catalog had, with no additional references the card catalog lacked. The system became operational in the fall of 1980.

Planning for the initial presentation of the online catalog was done by a committee of librarians, with representatives of every service unit in the library, including cataloging, reference, automation, circulation, and bibliographic instruction. One of the committee's underlying assumptions was that there would be fear of or hostility toward the automated system and that the automation committee would have to counter this anticipated opposition.

The committee first used its own members to test future instructional techniques. After members of the committee taught each other to use the system, all library staff including the director attended online orientation workshops. Attendance at a workshop was required. The reference staff also developed a set of commonly asked reference questions to provide further practice for the staff. In this way, library staff became more comfortable with the system and were better able to introduce patrons to it with confidence. For staff training, a psychologically comfortable environment was created by placing a terminal in a private area where they could practice searching the system without pressure, but would still have assistance of a committee member nearby.

The library planned an opening gala introducing the online system using the logo of a tiger-striped cat for the new CAT-A-LOG. This gala included a banner on the roof of the library advertising the new system, posters with the cat logo, information flyers on student union lunch tables, stuffed kittens on top of terminals, and staff T-shirts advertising the system. The program was very popular on campus, although other campuses in the system felt the campaign destroyed the illusion of the academic library as a protected, scholarly institution. Every attempt was made to meet students on their own level, and this approach proved to be very successful at Mankato State.

The popularity of the system created a huge demand for instruction, more than staff could easily handle. During the introductory period, all library staff demonstrated the system in the catalog room during all hours the library was open. Staff members wore T-shirts with the cat logo on them so students knew who to ask for assistance. Originally only one terminal was used for instruction. Later a monitor was attached to the terminal so that more users could view instruction being given. Users got an "I Used It" sticker after instruction in the system.

The freshman orientation program also offered an optional library component as part of a two-day orientation series. Basic instruction workshops were very heavily attended, and freshman orientation was considered a success.

Faculty were invited to attend department orientation sessions, but these were less successful. Sessions for departments with active past library instruction programs were heavily attended, but other departments had poor attendance. The library staff worried about faculty opposition to the online system. Faculty workshops stressed the advantages of the new system for them and demonstrated the online catalog's superiority to the old card catalog. Online printing of bibliographies for courses and other special system features were demonstrated.

Faculty and students are now unable to fall back on the card catalog, as it has been eliminated. Only the shelflist remains.

Current instructional programs include freshman orientation, department refreshers, and workshops, with terminal demonstrations available in the first two weeks of the quarter and during term paper week. Library Media 101, a freshman and sophomore general education elective, has a component of online instruction. This class has approximately twelve sections of twenty-five to thirty students each quarter. Mankato State's two full-time instruction librarians spend about 60% of their time in the classroom, reflecting the fact that library instruction is already heavily integrated into the curriculum of a wide variety of departments. Online catalog instruction was introduced into these lectures. Instruction staff found one-hour lectures no longer feasible, since one hour is needed to present the online system and a second hour is needed to cover the remaining bibliographic instruction. Instruction librarians meet with about 20% of the total student body of about 12,500 during each quarter.

In addition to instruction programs, there is on-demand instruction at the terminals, and staff will intercept students at terminals, or at other indexes, to see if they are finding what they need. Mankato State's philosophy is to have a very aggressive instructional program. There is a wide variety of types of instruction, with twelve to fifteen library staff involved in the various programs. Staff often share their experiences, successes, and failures.

The two basic goals of the program have been to overcome fear of the computer and to give students a successful first-time experience with the online system. Operational success with the system is stressed. Introductory presentations show users how to operate the machinery without getting into research logic. Users are shown how to find the call number and how the record contents are similar to those on cards in the card catalog. Introductory lectures stress that using the online catalog follows the same intellectual process as using the card catalog.

Printed handouts and a brochure listing commands are available near terminals, but the brochure is being phased out due to its high cost. Current plans call for one-page sheets to explain specific types of searches. A list of abbreviated commands has been developed that is placed near the screen to remind infrequent users of how the system works. Help scripts are available on the terminals, and staff are also working on a cassette training tape. Help is available in a variety of forms through the terminal, through printed material, and from staff.

Three levels of instruction are currently available. In entry-level instruction, it is assumed 90% of those attending have no previous experience with the online system. Topics covered in entry-level and intermediate-level instruction include: how to manipulate data and limit searches, truncating tips, common problems with Boolean logic, when to use "and" or "or", how the computer "thinks", and availability of printers. Advanced workshops cover Boolean searching, searching other libraries in the system, and saving information in Boolean searches in order to do more complex manipulation of files. Flexibility is stressed in each session to adapt to the needs of each group. There is no structured evaluation, but every course with a library instruction component has graded assignments that can be examined for problem areas. Students receive one assignment of easy searches covered in class, while succeeding assignments involve using more complex search techniques.

Students have adapted easily to the system, and the expected negative reaction never developed. Students regularly teach each other how to use the system. According to data from the CLR study, 30% of users needed no help to do searching, and 57% use printed materials if help is needed. This takes some of the pressure off library staff to provide online catalog reference assistance. Eighty percent of all patrons have used the online catalog but, of the 20% who have not used it, most said they thought it would be easy to learn but they have not taken the time to do so.

DISCUSSION HIGHLIGHTS

The print capability is not as much in demand as anticipated. It costs one and a half cents to print each title, but users are not charged. It would be too costly to collect from them. Users are allowed to print from 6 to 200 titles.

Staff turnover is low, so staff training has not been a problem. There is a NEWS feature that notifies staff of changes to the online catalog.

Audio tapes for instructional purposes are used for ERIC files and other areas, so audio instructional tapes for the online system should be accepted as well.

C. Pikes Peak Library

by Lynn Magrath

The Pikes Peak Library is a public library, so there is no opportunity for freshman orientation or large group instruction. Terminals were originally put out two weeks before initial training programs and publicity were ready, but many patrons were not intimidated by the system and began using it without instruction. This is because a certain sector of the user population is very sophisticated -- the kids!

There are no structured instructional programs for the online catalog. A thirteen-minute videotape entitled "Maggie's Place, Pike's Peak Library System" covers the general introduction to the library and online system and includes interviews with dial access users. About 450 homes have dial access to the online system, which contains community information as well as the online catalog.

The automation program began in 1975 with a circulation system developed by an in-house programmer. The online catalog was available by 1979, but library concern with potential user opposition was great. At that time, home computers and computerization in general were not as pervasive as now. But in a survey taken by staff, 81% of users preferred the online catalog to the card catalog because it was faster and easier to read. Elderly patrons like not having to bend over to reach low drawers.

The library does not have staff time available for instruction, and there is a high percentage of one-time users, so the basic instructional philosophy is to make the system as easy as possible to avoid instruction by staff. The library switched from a one-page information sheet to a larger brochure with examples. This was to aid users who generally do not want to learn the system but simply want to fulfill their information needs and leave. Ninety percent of the users in the original survey had never used a terminal, although it is assumed more people would now have some experience with terminals.

The online system started with a pre-test catalog. Originally, prompts appeared at the beginning of each search, but these turned out to be too wordy, bored patrons, and slowed down experienced patrons, staff, and the system. Help messages are now used instead with a minimum number of prompts.

The present catalog has improved due to information gathered from the survey, transaction logs, staff use, and patron feedback. The transaction logs have been especially helpful in analyzing data and making sure dial access users do not use restricted files such as the patron charge information file. A user number and password let staff know who is doing what on the dial access system. When users get their password, they also sign an agreement stating they will not try to get into protected files. Both businesses and individuals have dial access to the library system. The transaction logs also show that the majority of searches are by title, with only 4% of records retrieved in the MARC format.

Training users is interesting because the user population is split. Kids are very sophisticated users; adults are usually not. Brochures are available for people who will not ask for help. The brochures have been very popular. Users of the dial access system receive a manual covering the philosophy of searching and more in-depth information on the system. Help messages are also online for people who get stuck.

A corps of volunteers, after two days of training, approaches users during peak hours to explain the system. Evaluations have shown that volunteers assisted users, two-thirds of whom had not specifically requested assistance, in finding information and saved them time with their searching. Ninety-six percent of those questioned said they felt better about the computer after receiving assistance.

Training of staff is a different matter because staff need to have an overview of the system and understand more than is taught in individualized instruction of the public. Public services staff receive training on the community databases and the online catalog, which is now being reprogrammed to add Boolean search capabilities and to have a prompt system based on three levels of user expertise. This system means a beginning user will have access to a more lengthy series of prompts, while a more experienced user will be able to bypass explanatory prompts and search the system more quickly. It is hoped that this system will decrease the amount of individualized training of users that is necessary.

DISCUSSION HIGHLIGHTS

For help with files not explained in the brochure (for example, the file of licensed day-care centers in the area), users can type in the name of the file and "help". Eventually patrons will be able to create their own files.

Volunteers who want to help people too much may give users incorrect information at times. If this happens, it is best to retrain the volunteers and meet with staff in the Reference Department to examine the problem.

D. Dartmouth College

by Emily Fayen

Dartmouth has a philosophy of education in the library that is similar to the "environment for learning" discussed by Northwestern's Brian Nielsen. Dartmouth assumes that what a student learns is up to that individual student. The library provides an environment for learning as opposed to training users to do specific tasks. This environment will teach students how to think and how to make use of services for themselves. There is an undergraduate student population of 4,000, with a graduate population of around 750 students.

Dartmouth College Library is a network of eight branch libraries, with Baker Library serving as the center for processing, cataloging, and acquisitions. The library has about one and a half million volumes, with 30,000 titles added per year and over 18,000 current periodicals. It has been a member of OCLC since 1972 and of RLG since 1979. In 1964, the library converted from Dewey to Library of Congress classification and since then all of the LC-classed shelflist has been converted to machine-readable form. Machine-readable records are now available for approximately half of the library's holdings. Retrospective conversion is continuing with a project in special collections, and a project to convert the remaining 300,000 to 400,000 titles will begin in the fall of 1983.

The online catalog became available in 1980 and can be searched by any key word. Author, title, LC subject heading, and other fields are searchable, and Boolean searches may be conducted if desired. Eventually the circulation and bibliographic files, which are now separate, will be linked. Staff were concerned during the early stages of the online catalog with student and faculty acceptance of a library computer system. About six months after the program started, a terminal was placed in the public catalog area to see if students would use it. It was assumed students would not take the time to read a user's manual and so instruction would have to be in the system itself. A one-page sheet explaining system commands is available and students say that it is extremely helpful, but some students also learn to use the system by themselves. This is possible because over 95% of the students have some other contact or experience with campus computing services. It was also decided that the fifty public access terminals in the library would not be dedicated to use of the online catalog alone. Students can use these terminals to do math homework or write term papers as well as access the library's holdings.

There is a week-long orientation program for new students that includes a library component made up of a twenty-minute slide-tape presentation and a tour of campus libraries. A great deal of bibliographic instruction related to specific courses is also available from the reference staff upon request of faculty members. For internal instruction on the online catalog, there is a series of prompts and help commands. At the present time, these are too wordy and have too many options. For example, if users mistype information on a command, the error message reads, "I don't have an explanation for that topic. Did you type it wrong, perhaps? Please check the list of available topics and try again."

A demonstration of the online system was available previously but was discontinued, as it was more a hindrance than a help when students were unable to translate what they had seen at the demonstration into what they were supposed to do after signing onto the system. The philosophy of online catalog design was to make the catalog similar to other campus computer facilities with which students were already familiar; such similarity should aid students in their use of the system. Response to the system has been very positive even though the library has changed passwords, hardware, and software.

The BRS software capabilities and the online database structure provide an extremely powerful system for online retrieval. The three main options for making the system available to users were (1) to use an intermediary to conduct searches for the patron, (2) to train users to conduct their own online searches via bibliographic sessions, or (3) to develop a user interface that would enable users to conduct their own searches without assistance or training. Dartmouth selected the third option as the most appropriate for its user population. The interface program serves as a buffer between the library user and the BRS software package, is forgiving of errors, and eliminates jargon. The interface has undergone a number of revisions and changes as a result of experience with users of the online catalog, and will continue to change as more is learned about user needs. Availability of an inexpensive intelligent terminal with full face display capabilities and a screen editor would also make a radical change in the way users interact with the system. An entirely new interface would then be needed to take full advantage of these enhanced capabilities.

The library should be a focal point for academic inquiry, not just a depository of books. As the Dartmouth Library works in cooperation with the computing facilities and other online catalogs throughout the country, a much stronger research tool than has been available in the past will evolve.

DISCUSSION HIGHLIGHTS

One of the early versions of the interface allowed users to see what the online catalog was really searching for while it was executing a search. That may be reintroduced in later versions of the interface if a way can be found to explain what is happening without confusing the users.

The decision to keep the card catalog in some ways could be considered political. It still costs approximately $80,000 a year to file cards in the catalog and when that is no longer necessary, it will be possible to use those funds to pay for enhancements to the online catalog.

The online catalog contains everything added since 1964. Fifty to sixty percent of the searches are by subject. This percentage is not based on the transaction log but on the CLR survey and on an in-house card catalog survey.

E. University of California, Berkeley

by Anne Lipow

The Catalog

MELVYL, the online catalog for the nine-campus University of California system, has been available in prototype form for over two years. With approximately 800,000 titles representing 1.3 million individual campus records, the database can be very useful, though it contains only a fraction of any one campus's holdings and a disproportionate fraction at that. For example, of Berkeley's 6 million volume collection, only about 182,000 titles are listed in MELVYL; the smaller campus at San Diego has more in the system:

about 239,000 titles. MELVYL contains only books, no serials or other formats. It is strongest in late 1970s imprints because for the most part its records were derived from OCLC and RLIN records created between 1977 and December 1980. (For Berkeley, that represents only a portion of the materials cataloged during those years.) Some campuses added older records, and the undergraduate library on the San Diego campus put its entire holdings into the database.

MELVYL has two modes of use: LOOKUP Mode and COMMAND Mode. LOOKUP Mode is for "new or occasional users," takes virtually no time to learn, and does quite a good job of guiding the user through a search. But it takes more time to complete a search in LOOKUP Mode than in COMMAND Mode since about one-fourth of the screen is taken up with a menu of choices. Also, it is less flexible to manipulate than COMMAND Mode (for example, you cannot easily jump back and forth from screen to screen) and often frustrating (e.g., it sometimes requires you to respond with an arabic number when the natural response is a word.) Most users choose this mode and they say they love it.

COMMAND Mode by contrast is quick and powerful, but requires that you know the commands, the grammar, and Boolean searching techniques. Help screens are available to assist users, and for the most part they are well written and relevant to the problem of the moment. Yet despite this online aid, the majority of users do not realize it is there. Consequently, most users do not pick COMMAND Mode on their own. Those who do, however, say they love it too.

At Berkeley, terminals to access MELVYL are located in public areas: five in the Main Library, two in Moffitt Undergraduate Library, and the rest scattered singly in selected branch libraries throughout the campus.

Some Premises of Online Instruction

Four basic propositions are shaping the instruction program at Berkeley. They are based on our observations as we gain experience teaching users the online catalog.

1. No matter how good an instructional method is, there is always a significant number of users who are not being reached by it.
2. Regardless of how successful a particular instructional program for users is at a given point in time, it is not a sound, long- range instructional program for users without a sound, long-range instructional program for staff.
3. If there is a way to misinterpret or misuse the online catalog, there will be a sizable percentage of users who will find that way.
4. The friendlier the system, the more likely it is that users will not exploit it to its fullest, because with a minimum of effort they get results and are lulled into believing they can use the system quite well.

A Variety of Instruction Programs

If the first proposition is true, that not all users are reached by any one instruction method, then it is important to have a variety of programs aimed at the different ways people learn, the different constituencies of the library, the different places people congregate, and the different amounts of time people have to spend learning. Also, there is an ever-present challenge to find ways of reaching even the experienced users who are self-taught. People who teach themselves COMMAND Mode may get results from the system, but it is likely that they have not learned how to make use of important system refinements -- such as how to qualify a search to reduce a large result to a manageable list, how to save time using scanning screens, and how to use more than one search term with Boolean logic -- and so too often they miss important citations.

Therefore, instructional programs are needed for experienced users, users who are afraid to touch the terminal, and all categories in between. To reach some of them, Berkeley has been using a few approaches simultaneously.

For users who learn best by reading, or are too shy to ask for help, or who have asked for help once and are reluctant to ask again, we provide a clearly worded and well-formatted user's manual. The manual is kept at reference desks, and a handy one-page summary of the manual is available at each terminal.

Undergraduates may learn about MELVYL as part of a four-credit course called "Bibliography I." Or they may avail themselves of a series of mini-courses offered by the Moffitt Undergraduate Library called MOLE (Moffitt Orientation and Library Education), which includes MELVYL training.

We reach faculty through our annual program of "Faculty Seminars on Library Research Resources," and through non-library orientation programs for special faculty groups (e.g., new faculty, women and minority faculty). Another annual library offering is an update for people who assist faculty (secretaries, administrative personnel, research assistants), and a portion of that program, too, is devoted to MELVYL instruction.

Some online instruction is held in a room with two monitors and seating for about 20 to 25 people. One of the most successful and satisfying programs, however, takes place twice a week at the three terminals in the center of the main catalog hall. This forty-five-minute hands-on session is publicized by posters on bulletin boards ("MEET MELVYL . . ."), signs on the terminals ("TIRED OF USING LOOKUP MODE? . . ."), a mailing to faculty, and announcements over the public address system. This program attracts both users in need of basic instruction and those who thought they knew how to use COMMAND Mode. It is this program, too, that attracts people who had no intention of using the catalog but overheard some instruction that sounded like something they could handle. The session is billed as teaching the basics of COMMAND Mode and ends with a summary of the features that were not covered, encouraging them to watch for advanced workshops when the system is fully operational. Each participant receives a copy of the "User's Guide to MELVYL," which covers all of the features of the system. Instructors, drawn from the library staff, follow either a script or an outline of points to cover. By the time the session is over, every participant has had practice keying and knows how to perform most kinds of searches with satisfactory results. Their evaluations of the program are uniformly glowing.

Instructing the Staff

Teaching MELVYL to all library staff has many benefits. It creates a more competent, more self-confident staff who, whether or not they need the information in their daily jobs, feel more connected to the library system -- which, of course, is good for morale. It also increases the likelihood that a user's question will be dealt with directly and effectively by whatever staff member handles the question. And, finally, it creates a ready pool of instructors, enabling the library to launch and sustain a good user training program. The hands-on program for users described above is taught in teams of two (usually a librarian and a library assistant) by a total of twenty-five volunteer staff who have been given additional training in MELVYL instruction.

MELVYL's Law

Turning to the third proposition -- if there is a way to make a mistake, MELVYL users will -- we try to identify as many of those mistakes as possible and address them in the hands-on instruction program, often forcing or tricking the unwitting user into keying the error to demonstrate the result and then show how to correct or avoid it. For example, the instructor watches for the user who inevitably keys the letter "L" instead of the number "1", causing the system to respond with an error message, and calls that to the group's attention. Or the naive user may be asked by the instructor to enter a search, omitting a command mode -- and then to analyze what went wrong and suggest ways to correct the situation.

In addition to keying mistakes, users misinterpret the responses to their search requests, often because they are making assumptions or following procedures that were appropriate in using the card catalog, but are unsuitable for the online catalog. To address this problem, users are taught to be skeptical of searches that turn up nothing and to think of alternative approaches to achieve a positive response. It is pointed out that the card catalog was often forgiving if searched with some kinds of erroneous information, but that the online catalog is not so tolerant. For instance, in a card catalog, the ability to see the surrounding records in the "database", as it were, enables you to find what you need even though you may be looking it up under a misspelling. Using MELVYL, you are liable to get a system response of "zero" if you misspell. Instructors also make the point that the user will have to learn new habits that were not required in using the card catalog. Entering an inverted name without a comma, for example, will result in no hits in MELVYL, whereas awareness of such punctuation is often not so critical in using the card catalog. Another problem users have with MELVYL stems from their need to know the difference between an author, a title, and a subject. That is knowledge that doe not come naturally, and it is not needed in a dictionary card catalog. For example, when searching a personal name in MELVYL, some users do not understand that sometimes that name is an author, sometimes it is a title, and sometimes it is a subject, and it is necessary to know which is which to get satisfactory results.

For some searches in MELVYL it is necessary to understand how the system works in order to get the best search results or sometimes any result at all; users cannot easily learn this information on their own. For example, using LOOKUP Mode, the self-instructing mode, when the searcher asks for material on a subject using a term that is not an authorized subject heading (such as "Chicano") the system will respond with a positive result because it is searching not only the subject heading index but also words in titles. But in COMMAND Mode, if the searcher keys "FIND SU CHICANO", the system will respond with a "zero" result because only the subject heading index is being searched, and books on Chicanos are put under the authorized heading "Mexican American". In the training session, the user learns that it is necessary to key "FIND SU CHICANO OR TI CHICANO" to obtain the same result as in LOOKUP Mode.

A False Friend?

MELVYL, by all testimony, is a friendly system. That is, users take to it quickly and begin retrieving citations easily with little knowledge about its complexities. And there lies the problem. The ease of use leads to mistakes, misunderstandings, misinterpretations, and wrong assumptions -- only a fraction of which have been discussed in this paper. So far, we are finding that these problems are best dealt with through in-person instruction. No doubt a self-paced online or printed tutorial (neither of which yet exists) would do as well with many users. Some librarians believe, however, that it is acceptable for patrons to underuse or misuse the catalog as long as they are happy with the results. "Who are we to say that the patron's results are not good enough when the patron thinks they are?" they would say. At Berkeley, we are trying to intervene wherever possible to correct the misguided searcher, as part of a larger effort to improve users' library skills. The goal is to develop competent independent users. Then, if such a patron is content with a search result quickly retrieved rather than one giving the most complete information, we will be satisfied that it was done by choice rather than from ignorance.

DISCUSSION HIGHLIGHTS

There is something to be said for the term "user friendly" really meaning simplistic. Clarity in the system and in prompts is different from simplicity.

The card catalog was frozen in 1982 but there is an up-to-date fiche catalog in addition to the online catalog. This is a messy situation but it makes it easier to convince people to try the new system rather than a catalog with ten types of cataloging rules represented in it.

Each instructor uses a different method to successfully teach users. This variety of methods should be encouraged.

People automatically search for the easiest to obtain, not necessarily the most complete, information. Some people would argue that this type of approach is not necessarily bad.

It is important to have hands-on experience in instruction if one wants to really see what patrons are doing wrong and correct it on the spot.

F. Iowa City Public Library

by Lolly Eggers

It has been useful to have public as well as academic libraries represented in this conference on training users in the online catalog and to have public libraries represented in the online catalog survey.

The Iowa City Public Library system serves a community with a population of 50,000, 28,000 of those being students at the University of Iowa. One-third of library patrons are university students, and the non-student population is a highly educated one. The collection of 150,000 volumes circulates 500,000 volumes per year. The library has had a CLSI circulation system since 1979, and the online catalog was installed in 1980. The card catalog was closed shortly before the online system became available and was left behind when the library moved to its new building in 1981. There are no paper files remaining, not even a shelflist. The online catalog includes everything in the system that is cataloged, regardless of format, including books, serials, films, games, video cassettes, and recordings. Twenty percent of circulation is for non-print items.

The online catalog can be accessed in two ways: touch terminals and command driven keyboard terminals. The touch terminals are a simplified menu approach where users touch the screen to select the type of search or section of the file they wish to view. All files are named in the display and few abbreviations are used, which means the entries are comprehensible to users when they retrieve a record from the system. Currently there are eight touch terminals and one keyboard terminal in four locations for public use, but the library soon will have ten touch and two keyboard public terminals. Two in-house traffic studies show the online catalog is used three times as often as the card catalog. Terminal availability is a big issue at the library, but studies show that at least one public terminal is available 65% of the time.

Experience has shown that informal training is the best method, since public libraries cannot easily round up users for workshops. In the first nine months of the system, there were no written instructions and no formal education programs. The staff were still learning how to train people and the old card catalog was still available. At that time, user response was 99.9% positive to the online system. Now, two and a half years later, it is obvious that staff will have to provide instruction on the system forever, although written materials and help messages are available and heavily used. With no alternate catalog, there is a small but vocal percentage of unhappy users.

Help messages are in their third version and introductory screens have been refined so that frequent users will not be bored by extra words. However, some users are afraid to use the help option because they fear it will automatically call a librarian to the terminal. Hard copy one-page instruction sheets are available at the online catalog. These sheets follow the same format as the instruction sheets used for public access AV equipment at the library. The sheets need regular revision as the system changes. There are no current plans to expand printed information, but the library may work in the future on a manual for users who want to take home more information.

The library instructional videotape is now in its second edition. This tape is an inexpensive in-house training tape that has been broadcast over the library's cable channel and is available in the public schools. It is also used to train library volunteers. Hence, it serves as both a promotional and a training device. One problem, however, is attracting users when the library already has an insufficient number of terminals. A tour of school children with a special assignment can take up all available terminals for several hours.

Older patrons are the ones who feel the most pressure in learning the system, especially if they are standing at a terminal with younger users waiting in line. It would help to have an instruction room where users could sometimes be trained in private.

A volunteer assistant system was run on a three-month trial basis but was considered unsuccessful, possibly due to poor selection of volunteers or insufficient training. Traffic was uneven and volunteers sometimes were bored. On occasion, volunteers, mistaken for librarians, tried to carry a search too far and ended up giving patrons incorrect information. After the trial period, the program was dropped.

Training is now back in the hands of library staff. This training is time-consuming, as it takes more time to train people in the use of the online catalog than it did to train card catalog users. It seems users were often ashamed to admit they did not know how to use the card catalog and therefore did not ask for help, but they now feel free to ask for instruction in the online system.

There is regular evaluation of informal training, a comment and complaint form users can fill out is available at terminals and at the information desk, and a written log of user comments and staff observations is kept at the reference desk. Staff have biweekly meetings to discuss these evaluations as well as problems or new ideas. Staff also share "scripts" or techniques that have been successful for training.

Catalogs, like libraries, are complex, and users should not be given the idea that they know how to use the system when they really have learned only the basics. People learn when they have a need to learn and will take the easiest possible method. They will not read instructions if there is someone there to help them. Point-of-use is the best way to teach the system.

Users have a much different attitude towards the online system than towards the card catalog. Some avoid it and some embrace it; all tend to personify it. Some users demand the library staff do the searches for them. Some request the return of the card catalog and do not realize why a dual system cannot be run. These requests occur because the library failed to explain to the public the cost and time involved in maintaining the card catalog. Some patrons expect the terminal to do everything for them or get confused as to whether the terminal gives information on what has been published or just lists what the library holds. To them the computer is always right, and therefore some users have a hard time understanding why a book is not on the shelf if the availability record lists it as being there. The public's ability to find out the status of each item in the collection has had greater impact on library operations than any other feature of the online catalog.

Three levels of instruction are needed for public library users: a beginning level to introduce the system, a refresher level for the moderate user (this may be taken care of by help messages and brief written instructions), and instruction on the command-driven keyboard terminals for the heavy user who wants information as quickly and accurately as possible, especially known item searches.

Today we are in a transitionary period for instruction. The situation will change substantially as online catalogs become more standardized. People will have skills that will transfer from library to library.

DISCUSSION HIGHLIGHTS

If users make a mistake on the touch screen system they have to start from the beginning of the search; there is no way to go from a specific screen back to a more general screen. This frustrates users but the system is run at 4800 baud, response time is good, and the displays come very fast.

The keyboard system is command driven but accesses the same information found through the touch screens.

The training videotape was made using in-house talent and public access video equipment housed in the library. Staff time for script preparation and editing was not tabulated but taping took one day.

G. Guelph University

by Ellen Pearson

Guelph University is primarily a science-oriented institution comprised of seven academic colleges. The undergraduate population is about 10,000 to 11,000, with 700 to 900 graduate students, 800 faculty, and 2,000 staff. The city of Guelph has a population of around 72,000. The library system has 1.9 million volumes including books, serials, microforms, films, government publications, and audiovisual materials, and it is growing at the rate of 100,000 volumes per year. All users have open access to the system, but serial and non-monographic items do not circulate outside of the library. The library has 35 professional and 118 support staff when fully staffed.

The library has been using automated systems since the mid-1960s. There has been a definite shift of staff during that time from technical to public services positions. Public service is now around 60 to 70% of current staff, whereas in the pre-automation period, technical services comprised 60 to 70% of all staff.

Guelph has had machine-readable bibliographic records since the mid-1960s, making conversion of holdings less of a problem than at other institutions. The first module of the current automated system was circulation, designed in 1974-75 and programmed jointly with GEAC in 1976-77. The circulation system became operational by the fall of 1977. The library went for the simplest system in order to serve the largest number of users with the least number of staff. Turnstile figures on a peak day have reached 12,597, with the reserve book area handling up to 1,300 transactions per day. Because of these high user statistics, any system introduced would need to be simple to learn.

Orientation and bibliographic instruction are the responsibility of the Orientation and Bibliographic Instruction Committee, which enlists the help of additional library faculty to offer a diverse set of programs for undergraduate and graduate students. Drop-in tours, sign-up classes, specialized library use instruction, individual introductions to the library for faculty members, and orientation sessions done in conjunction with campus-wide student orientation programs are all offered, including special programs for mature and returning students. During the first week of the term, a terminal is also taken to the Student Center for demonstrations. Drop-in tours are offered three times per day for the first five days of the term, then twice a week after that. The drop-in tour now includes a slide program, a walk around the library's main floor, and a look at one of the subject divisions.

A bookmark with information on the library and "scratch paper with a message" are also distributed widely to students. Such aids tell users what to do when the screen is blank, how filing order works, and what types of information are in the Online Inquiry system. Online Inquiry was meant to show item availability, but users treat it as if it were an online catalog and think it has subject access. The Book Inquiry system is available only in the library because the terminals providing that system are hardwired to a minicomputer. This system is menu driven and based on selection of desired items. If users can read and count to ten, they can handle the system. Responses and displays have been changed to avoid ambiguity, and the system follows logically from screen to screen.

The other public access system is Remote Access, which is available to anyone on campus hooked into the campus communications network. It is also available through the datapac network to anyone in North America, or, indeed, to anyone linked to a telecommunications network. An information sheet called Access describes the library system, the online system, and how to access the system on campus, by phone, or through the telecommunications network(s).

Evaluation is done through a variety of channels, including feedback received by librarians in the subject areas. Users learn to know their subject librarians and will often approach them with problems. Terminals are dispersed throughout the library building but are usually by the Readers' Service areas. If users appear to be having a problem, staff are expected to ask if they need help. A questionnaire survey conducted near terminals showed that 75% of patrons have used the online system more than ten times, while 18% have used the system eight to ten times. Ninety-four percent said screen instructions were clear enough, while 68.5% said they did not think they needed help, 25% got help from staff, and 7% asked friends for assistance.

Borrower Inquiry is a very popular feature showing a patron a summary of books out on loan to them, holds on titles, fines, and books being held for them. To insure privacy of records, individuals must use their barcodes to make inquiries. According to the questionnaire, 69.8% used this search, 59% did author searches, 75% did title searches, and 40% supposedly did subject searching, despite the fact that the system does not have subject access. Another form of evaluation is the question and answer board. Suggestions made by students on the board have been implemented in the online system.

Weekend and evening users are difficult to reach with staff, so self-help and online help must be simple enough for users who may never see library staff. In summary, 91% of users thought the location of terminals was fine but there were not enough of them. Students have asked if signs could be placed on terminals saying "Yield after two minutes" in order to cut the waiting lines. Seventy-two percent thought the terminals were easier and 78.9% thought the terminals were faster than the manual system. Eighty-eight percent felt successful in their searching.

The Book Inquiry, Borrower Inquiry, and Remote Access modules are systems accessible to the public, but the system also includes acquisitions, item inquiry, and maintenance systems for staff. Faculty access to the on-order file is being developed, to be followed by changes that will allow faculty to place order requests online. This is dependent upon building an accounting system with individual passwords for faculty who generate orders to insure ordered titles go on the correct fund.

The next direction in orientation is use of videotex/TELIDON technology. Guelph is participating in a pilot project with the Computer Communications Group of Bell Canada for an intelligent network concept (iNet), and with TV-Ontario, the public broadcasting system, in videotex display of pages of information for users to read. This may be the direction of the future for orientation and instruction. The Library plans to have the videotex/TELIDON terminals in public areas because the systems tend to be easy to use, menu-driven, and an economical way to store information that library patrons need to know. iNet, the intelligent network trial, lets users move from one online catalog to another within the network. This capability has interesting implications concerning the amount of information a library can supply for users and in the way data are handled in-house. It may be possible to organize the information in a simple way for users to read but still allow for complex search strategies. The field trial began in July 1982 and will be completed in July 1983, when the market trial begins. As part of the project, our division heads have access to electronic messaging. This access has reduced dramatically the time spent by our middle management group "playing telephone ping-pong," and our communications patterns have definitely changed.

DISCUSSION HIGHLIGHTS

The Borrower Inquiry system is used very heavily because this is the major form of communication between the user and the library. Users find out if they have a book overdue, if a book is being held for them, if they have fines and cannot charge additional books, or any information they need to know about their personal transactions with the library system. There is no time at the circulation desk to handle these types of requests due to the very large user group, as illustrated by turnstile entrance statistics (more than 2 million entrances in 1981-82).

The original online circulation system at Guelph was a batch system developed around 1965-67. At that time, the majority of library staff were involved in technical services, but now the percentage has reversed. In addition, catalogers also spend one or two hours per day on the catalog information desk, a practice that contributes additional time to public services functions.

There are four library systems within twenty miles of Guelph with reciprocal borrowing agreements. Searching these other library systems' holdings has increased interlibrary loan traffic and users may actually drive to the other location to charge out materials directly, using their University of Guelph ID cards.

H. University of Illinois at Urbana-Champaign

by Danuta Nitecki

The University of Illinois at Urbana-Champaign (UIUC) Library has a collection of around six million volumes, making it the largest state-supported, third-largest academic, and fifth-largest library in the U.S. The collection is housed in a main stack tower and in thirty-five branch libraries, half of which are located in the central building. Bibliographic control of the collection is available through the central card catalog, the online circulation system (LCS), and the transitional catalog with items acquired since 1979. Records of items acquired since late 1974 will eventually appear in the full bibliographic record in the forthcoming online catalog. This online card catalog will consist of the abbreviated bibliographic and circulation record available now via LCS and the full bibliographic record (FBR) for items cataloged since 1974. The FBR will be available using software purchased from the Washington Library Network. By fall 1983, the full-bibliographic-record segment of the online catalog and the circulation record will be automatically joined. In the interim, and to facilitate users' access in the future, the link between these two segments will be made by an interface program developed by a UIUC professor of linguistics, C. C. Cheng, for use on an IBM personal microcomputer.

The primary user group of the UIUC Library includes 35,000 students, 6,500 faculty, and 5,200 staff. The library is also part of the LCS network. This network is a group of twenty-three Illinois academic libraries that have agreed to convert their shelflists and use the LCS circulation system. Users may access materials from any of these collections. The library is also a strong resource for the state-wide library network, ILLINET. Organizationally consisting of 18 systems, 4 Research and Reference Centers, and 3 Special Resource Centers, ILLINET serves approximately 600 public libraries, 165 academic libraries, 500 special libraries, and over 800 school libraries, totalling around 2,100 libraries within the state. UIUC is funded by the state to serve as one of the Research and Reference Center backups for other network libraries, providing interlibrary and reference services for these off-campus users.

Training responsibility for different user groups is handled differently for each group. On-site users of the system have access to an information desk in the main card catalog area. In the Undergraduate Library, there is an active instruction program. All other branch libraries are responsible for their own user groups. The UIUC branch librarian has an integrated function of both public and technical services, usually centered around a subject specialty. These librarians are then responsible for training the user populations associated with their subject areas. Statewide training programs have been developed by committee. Training of ILLINET system users rests primarily with UIUC IRRC staff.

There is no single approach at the UIUC for teaching the scope of the online system. Because the system is complex, UIUC is focusing on a longer-range plan involving development of and enhancements to the online system. Access to materials is available through two forms, print and online. The print category includes the main card catalog, closed in 1979, which is a union dictionary catalog of 5.5 million titles. Supplements to the main catalog consist of approximately 400,000 cards that remain to be filed into the main catalog. These cards are filed using AACR I and ALA filing rules.

Since November 1975, there has also been a "new book" catalog with over one million volumes now listed. This catalog is arranged by AACR II and ALA filing rules. There is also a central serial record of bound volumes up to 1979 filed in AACR I order, although the current issue check-in files are arranged by AACR II entry.

The thirty-five branches have current check-in files for serials. Several pilot projects are under way to convert these to online serials check-in. There is a shelflist in the public area for items acquired prior to 1979. Although these constitute the major manual files, there were around fifty other files when the LCS system was first introduced.

The online file consists of LCS, the circulation system that has been serving as a quasi-online catalog. The system consists of abbreviated records taken from shelflist data, the serial record since 1975, and the OCLC archival tapes since 1974. The full bibliographic records from the OCLC tapes will be available later this year. The LCS system is a modification of the system developed at the Ohio State University and is being used not as an online catalog but as a circulation system. Although quick access to all holdings via known author or title and the ability to browse the records by call number order makes the system function as a quasi-online catalog, comprehensive subject searching is unavailable. The system is command-driven, using three-letter search codes. Users see a display giving abbreviated bibliographic information, location, circulation status, and charge information. Users can also check to see if a title is available at any of the other participating libraries in the system.

Several types of aids have been developed to be used in conjunction with different training methods. In-depth manuals provide detailed searching instruction and examples. These manuals were developed primarily for staff. A smaller manual has been developed covering use of LCS for interlibrary loan purposes and for remote users. The problem with the manual is the need for repeated revisions. The smaller manual has been used primarily for training and reference in the network setting. Procedural descriptions are also drafted for staff manual updates and for interpretation of LCS procedures for particular staff functions.

Undergraduate Library staff have developed a research guide, required for all freshmen and transfer students for orientation programs, which includes appropriate information about LCS as well as other searching techniques in the library setting. LCS does not have a separate chapter in the guide but is introduced as needed in the search strategy. A variety of handouts, summary cards, and descriptive brochures are used in almost all training sessions, though staff disagree concerning the effectiveness of some of the handouts. Some librarians hand out brochures at the beginning of instruction, others prefer to hand out materials at the end to serve as reminders. Staff at the information desk find the summarized information in the brochures too brief to adequately describe the complexity of the system for full user understanding of searching techniques.

Worksheets with examples and exercises for users to practice on are also distributed. The Undergraduate Library staff felt the worksheets were not effective and discontinued their use, but other librarians in the system feel they have been useful in highlighting complex searching problems. This is probably a reflection of the different needs of short-term, infrequent users and long-term, repeat users and staff. Users can also enter the word "help" to get a summary of help commands available to explain various aspects of the system. Help commands are too wordy at present and need to be refined, but it is assumed users who read help commands are willing to go through extra information if they feel unsure of the system.

Methods of training users in LCS use can be divided into several categories. An annual target audience of 6,000 freshmen and transfer students is reached by a program organized by the undergraduate librarians in conjunction with the departments of rhetoric, speech communications, and English as a second language. Over 150 sessions meet each semester to introduce users to the library and research strategies. Library instruction is course-integrated and is not taught as an independent topic. Students participate in Research Skills Instruction, RSI Follow-Ups, and/or Pre-RSI, depending on demonstrated need. A script for the RSI is available to assure standardized coverage of major areas, but presentations vary slightly with each instructor. Workshops on LCS are offered for users on campus and remote staff, stressing point of need application. Individualized instruction is used primarily at the reference and information desks; however, this is labor intensive with questionable return. At the bank of terminals near the information desk, staff also circulate to assist users who appear to be having difficulties. It can take between five and thirty minutes to raise user searching skills to an acceptable level, usually depending on user age and familiarity with computers. Most remote staff from network locations received early workshop training and now get one-on-one assistance over the phone with an instructor who does simultaneous searching on a terminal to replicate a specific problem the staff person is having.

Librarians at UIUC make distinctions between teaching patrons how to use the online system and improving their ability to obtain needed information. Training students in how to do research that includes use of the online system still seems to require the presence of library instructional staff, but this is less time efficient with infrequent users. Use of the new microcomputer interface will facilitate user/system communication. Until now, that type of communication has been handled by six operators at the Telephone Center who perform LCS searches, charges, and renewals over the phone during library hours. Users can also request through the Telephone Center that titles be held or mailed to them. This system has been successful in providing information with a minimum of user training.

The library does no direct evaluation of training programs and materials. Although students have occasionally done studies of the programs, these studies were not systematic. Only instruction that has been integrated into coursework is evaluated as part of that course by students. Informal feedback during instruction does give library staff some indication of user needs. Evaluation of remote staff training effectiveness might be seen roughly in use of the system. If so, a look at the volume of interlibrary loan requests proves understanding of the systems is highly developed. In 1978, when the system came up, interlibrary loan requests received totalled about 65,000, but by 1981 that figure had increased to over 156,000 requests, with over 75% of the requested titles being sent to the requesting library within twenty-four hours.

(Editor's note: Ms. Nitecki acknowledged the assistance of Betsy Wilson, Undergraduate Library, and Gary Golden, Information Desk, in the preparation of this presentation.)

DISCUSSION HIGHLIGHTS

Every item in the system has a circulation record, but only those items added after 1974 will have full bibliographic records and therefore have added entry and subject access. Boolean and key word searching is also going to be added in the future, with more easily understood explanations of complex searching techniques available through the microcomputer user-friendly interface. The interface both explains elements of the display and offers the user further searching choices.

Although LCS was originally developed at Ohio State University, the system in place at UIUC is a modified version of the original LCS circulation component. LCS, the Library Control System at Ohio State, has subject access and serves as the online catalog.

Undergraduate librarians felt that brochures and exercises directly related to point of use and need were much more effective than handouts showing particular types of searches that users may or may not ever encounter. Integration of LCS searching with class assignments was particularly favored.

I. The Library of Congress

by Linda Arrett

The Library of Congress is essentially a large public library with users of all types and levels of sophistication. The only limitation is that users must be above high school age. The Library of Congress Information System (LOCIS) consists of two public online systems containing nearly 5 million records in 19 files. The two systems were developed independently of one another and reflect only partial holdings of the library. SCORPIO (Subject-Content Oriented Retriever for Processing Information Online) was designed as a system that would produce a printed product and provide SDI (Selective Dissemination of Information) services for Congressional interests. MUMS (Multiple Use MARC System) was developed as a processing system and cataloging tool. At this time, books cataloged at the library for the general collections are common to both systems. Work is proceeding to bring the systems closer together in their appearance, if not in their actual technical operations. Both systems are command-driven and are searchable through inverted indexes, which are viewable in SCORPIO but not viewable in MUMS. For subject searching, most SCORPIO searches require use of controlled vocabulary terms selected from the proper thesaurus for a particular file. MUMS operates with compression keys and permits component or key word searching on all major cataloging fields.

Public users can access the systems at about 50 terminals in three buildings. One location in the old Jefferson Building is the Computer Catalog Center (CCC), which has a cluster of 18 terminals with 14 printers. The area is staffed by two reference librarians during the day; at this time no one is assigned to the CCC in the evening, though reference librarians are available elsewhere in the Main Reading Room for assistance. Other terminal locations do not have assigned librarians to provide training, though staff in other reading rooms do provide assistance when necessary.

The Library of Congress uses all types of instructional assistance, including charts at the terminals and "user-compatible live ware", commonly known as reference librarians. The time it takes to learn to use the system varies, though novice users frequently learn the basic searching steps in as little as fifteen minutes. The materials are not sufficiently integrated to provide a systematic purposive instructional environment. In part because the library users cannot be easily categorized and are not a captive audience, on-demand individual point-of-use instruction at the CCC is the training technique most often used. In the spring of 1983 the first systematic training program will be implemented as a pilot project by public services staff. This program will start in a new Automation Orientation Center. The center will have master-slave terminals that can be self-operating and a small auditorium for CRT and other audiovisual projections. The limited printed documentation prepared by the Automated Systems Office (ASO) is nearly always modified by public services staff for use by researchers. Staff training is now also planned and implemented by the various LC departments since ASO discontinued this function in 1981. An online users group coordinated by reference and processing staff has also proven valuable in keeping staff informed of new developments. Key trainers in each of the library's divisions often serve as an interface between their colleagues and systems staff.

Printed materials come in a variety of forms: signs, guide cards, brochures, detailed manuals, and user-oriented manuals. Some signs explain the scope of the systems and their various files, though, like all signs, they are sometimes not consulted. Sometimes the printed sources fail because they become outdated, or have been written without in-depth experience in the system or without an understanding of public user needs.

Guide cards have proven useful not for learning but for remembering. They tend to suffer from too much information not simply stated but reflecting the complex files and searching options. It appears that a guide card that merely summarizes by listing the major commands is desired by many users.

Two brochures, Introducing SCORPIO and Introducing MUMS, each four to six pages long, are written as orientation, not training, devices. Each is somewhat self-contained but does not completely place the systems in the full LOCIS environment. Each still uses technical jargon such as "Boolean logic" without explanation or definitions, and users tend to get lost as sentences become long and embedded with this jargon. The sample searches included are helpful but need to be explained more clearly.

A complete user guide for staff was recently revised by ASO staff with the assistance of public services and processing services representatives. The manual reflects new enhancements in MUMS and contains about 65 pages on file descriptions and 170 pages on search tactics. The manual has been well received and has proven to be the most informative such documentation produced to date. Still, this type of presentation is too demanding and complex for researchers. Public services staff in the past have reworked these manuals into other, shorter formats more useful for learning.

The principal format is a 25 to 30-page instruction manual placed in plastic flip charts at public terminals. These manuals contain sections on searching each of the SCORPIO files and an entire section on MUMS files and searching. The SCORPIO sections are designed to take users through the basic searching steps after describing the scope of each file, whereas the MUMS section is written in a more narrative fashion that has proven inadequate. Both parts use examples that are occasionally substituted by researchers for their actual search. After several years' experience with these manuals, we are still not able to say with any certainty which design is the most helpful: some users learn very easily with examples on the left and explanations on the right of each sheet, and some users have difficulty with this arrangement.

Jargon here still tends to confuse the researcher. Both systems are not very forgiving when it comes to spacing between the parts of a command, and it appears that more frequent written reminders are necessary. Due perhaps to their curiosity about the novelty of searching online and perhaps their expectations that all the necessary information will appear on the screen, many users neglect to turn to the second page of each file's section to see the step for displaying the search results. All the primary steps for searching any SCORPIO file must be on a single page of printed instructions. Additional systems inconsistencies result in instructional problems. Limiting a search result is handled slightly differently in each SCORPIO file and in a totally different way in MUMS, and these inconsistencies require unnecessarily elaborate instructions. Despite the problems suggested here, this manual at the terminals is extremely valuable. The searcher who carefully reads the manual while searching learns the basics of SCORPIO within fifteen minutes. Librarians continually refer to the manual as they provide on-demand assistance at the Computer Catalog Center.

In addition to the formal manuals, guide cards, and brochures, librarians have available a printed, informal newsletter entitled XMIT ONLY, named after a confusing prompt on the screen. XMIT ONLY is prepared by reference librarians very knowledgeable about LOCIS and its future, and it is written from a public services perspective. Six issues have appeared between August 1982 and April 1983. An index to the issues permits librarians on duty at the CCC to consult the newsletter to handle specific instructional or other inquiries not well treated in the other documentation.

Especially for first-time searchers, librarians at the CCC can rely on a simple online tutorial on the basic steps in SCORPIO files. This TEACH tutorial has subject, author, and title simulations available. The tutorial is written in a clear and simple style and takes 5 to 10 minutes to complete. During busy periods at the CCC, librarians are able to sign new users onto the tutorial, assist others already searching, and then return to assist the new users. Even though users come away from TEACH with a basic procedural understanding of SCORPIO searching, we find that some forget what is learned when they sign off of TEACH and onto the production system.

As a step toward resolving this kind of memory problem, we have produced an online application called SHOW, which is available on each SCORPIO file. The SHOW menu can be called up at any point in a search. SHOW screens explain the scope, functions, and searching capabilities of each file, and are useful for learning about files and for refreshing one's memory. Some principles desired in the construction of SHOW screens are: the information should serve all users; the instructions should be written in simple English syntax with no abbreviations and no jargon; the commands should be congruent with normal English meanings; the user should be able to get to the SHOW screens from anywhere in a search with as few steps as possible; a complete thought or function should appear on a single screen; the screen formats should be clear and easily identifiable; sources for additional information should be clearly indicated; and it should be easy for staff to change the text.

Additional online assistance is provided by sign-on messages and error messages. The MUMS sign-on response lists the major search methods available and includes examples. Both SCORPIO and MUMS sign-on responses also give an indication of the scope of the various files, but even this indication is easily forgotten. The conflict we have been trying to confront here is one between the desire to use only one screen for a sign-on response and the need to determine not only how much, but which information should be displayed at this point. We are still experimenting. We also continually monitor the error messages. A few years ago a reference specialist completely revised these to be more intelligible, and we noticed an immediate improvement in users' ability to negotiate their way through mistakes and back to their searches.

Audiovisual instruction methods have proven less successful. A cassette tape program that described SCORPIO and included elementary instructions was rarely viewed in its entirety. A pilot optical disk orientation package is currently under development. Although the package is slightly interactive, the instructions cannot be modified as systems and files change; the entire package would have to be rewritten. Public services staff at this time are not particularly keen on this facility.

As indicated throughout, the instructional methods used at LC for the public are varied and not well integrated. During the past year, however, public services staffs have taken on an increasing amount of responsibility for the design of training methods and tools. We expect we will always favor a variety of methods. CRS (Congressional Research Service), which for the past few years has been using an instructional package written on PLATO for Congressional staff members, has found that a combination of training methods is most effective, particularly a combination of online methods and human intervention. At the Library of Congress, we do not expect a significant increase in the number of staff available for teaching the public. As our own catalog and information files become larger and the systems more complex and powerful, we will need several types of documentation that librarians can use to assist researchers.

VI. COMMUNICATION BETWEEN PUBLIC SERVICE AND SYSTEMS STAFF IN BUILDING THE ONLINE CATALOG

A PANEL PRESENTATION

The final session began with a panel presentation and discussion of communication between public service and systems staff. This chapter contains summaries of the presentations and notes from the discussions that followed.

Panel members were: Pat Swanson, Ruth Gibbs, Trarie Kottkamp, Susan Stearns, and David Penniman.

A. Pat Swanson

University of Chicago

(on leave to the Office of Management Studies,
Association of Research Libraries, 1982/83)

Our topic is communication between public service, especially reference, and systems staffs. Mistrust between public service and systems staffs has decreased in the past few years as increased communication has shown us that we share the same goals. There has traditionally been a lack of formal communication in libraries between technical service and public service staffs and between librarians and patrons that predates our current concern with online catalogs, but this situation is now improved.

To further improve communication with systems staff, it is important to state our ideas in crisp, concise statements, avoiding lengthy "worst-case" anecdotes. One systems analyst commented to a public services librarian, "You tell your tale as if you were Faulkner and I want to hear it as though you were Hemingway."

Both groups need to communicate in writing. Each library needs to have a known mechanism for communicating, such as a user education committee or online review committee with representatives from systems, technical services, and public services. If this is not possible, there should be a designated contact person in the major public services units and in the systems office to whom specific requests and information can be communicated. This procedure should help avoid problems such as implementing system changes without the affected departments being notified or memos going to the wrong office.

Reference librarians may be afraid that short instructions are abrupt, oversimplified, or misleading. We should concentrate on creating clear, concise instruction in several formats for maximum patron usefulness. Instructions for online catalogs are often too long because we do not have sufficient time to rewrite and refine them. Time is in terribly short supply at most institutions, yet time spent to improve user instructions is well worth the effort.

One of the major contributions of reference or public service librarians is that they hear the language of their users and know the individual styles of the users in their institutions. This conference has shown us the great diversity in styles and approaches for teaching use of online systems.

Each is probably successful because it matches the style of its institution. This diversity probably accounts for the varying degrees of "user-friendliness" and system "anthropomorphization" from library to library. Recognizing and matching style of instructions to the users is an important contribution public services librarians can make to the development and acceptance of online catalogs.

B. Ruth Gibbs

University of California--Los Angeles

The nature of public service/system staff communication will depend on the location of the automation effort. In-house automation projects allow for the greatest degree of public service/system staff communication and participation in the development and design of the system. Physical proximity permits informal as well as formal means of communication. If public service staff members have the requisite skills, their contributions can go well beyond the communication of departmental or user needs. For example, at UCLA several members of the public service staff were involved in writing specifications and code for ORION. This integral involvement of a few produced confidence in the entire public service staff that its needs had been considered at every stage in the development of our online information system.

Public service staff input into network automation projects is usually more limited. Specifications for the system are frequently developed in a committee context involving representatives of each participating institution.

The cooperative nature of the project may well limit the impact of any individual or institution on the development of the system.

Turnkey systems purchased from a vendor are the least susceptible to modifications proposed by public service staff. While many turnkey systems are in more or less continuous development, the vendor's need to generalize the system, making it commercially attractive to a mass market, limits the ability of any institution to affect significantly the development of the system.

Public service staff should keep several points in mind when communicating expectations to system staff. First, no one knows more about user information or user interaction with public service staff than does the public service staff itself. This knowledge must be incorporated into the specifications written for the system. Terms need to be carefully defined so that all participants are operating on the same wavelength. The size and scope of the library operation to be automated must be described as accurately as possible.

Public service staff may be inexperienced with automation and therefore may hesitate to ask questions that reveal ignorance to the "experts". Satisfaction with any automation effort will be limited, however, unless both groups communicate with each other effectively and freely. Public service staff should understand the operational implications before agreeing to design features.

Finally, public service staff should strive to understand the powerful new capabilities inherent in automation, in order to avoid the tendency to recreate the "card catalog on wheels." Staff should strive to anticipate changes in the information environment so that flexible and radical new ways of operating will not be precluded in the future.

C. Trarie Kottkamp

Evanston Public Library

Unlike most of the libraries represented here, the Evanston Public Library has a turnkey system. This means that we can share experiences and problems with dozens of other libraries, need no specially trained programmers on our staff, can usually see a product before we buy it, but cannot do something as simple as change the instruction term "satisfier" to "entry" on the online catalog without the assistance of our vendor.

Evanston has a turnkey system from C. L. Systems, Inc. (CLSI). The circulation package has been available at Evanston since 1977, with an online catalog since 1980. In contrast to many of the other systems discussed here, the Technical Services Department at Evanston Public was fully involved with all public service departments in the development of the online system and the planning of staff training programs. This is due in part to the CLSI computer format. Currently the display is limited to thirty fields, which have to accommodate all MARC formats and any special needs of the library.

This is a challenging task, and the pros and cons of not having a full MARC record are too numerous to list here, except for one vital point: it also allowed for flexibility beyond the restrictions of the MARC formats. We developed a list that not only accommodated most of the cataloging information we wanted to display for patrons, but had room for integrated Acquisition and Community files.

The Acquisition file has proven to be enormously popular and useful for all staff and patrons. Because it is fully integrated with a computer system that lists all titles owned or on order, only one file has to be checked to see whether or not a title should be ordered. The file can quickly be checked under any access point and from any terminal. This ability has opened up the acquisitions list to patrons, who can now have reserves placed on a title from the day it is ordered. The file also helps technical services staff identify items that need immediate cataloging and processing. Printouts of order lists are not only sent to vendors, but can be distributed to library departments that want to examine acquisition patterns -- for example, the children's department examined a year's worth of orders to determine what was being spent on new titles as opposed to replacements. Fund accounting is not available, since we are not using CLSI's acquisition module, but we have been able to meet most of our accounting needs by manipulating the title file.

The Community file provides information on local organizations. In addition to a listing under the name of the organization, access points are made from subject headings, so that the patron looking up the subject "birds" will not only find books, sound recordings, and films on birds, their song, habitat, etc., but will also locate a listing for the local chapter of the Audubon society.

The flexibility and variety provided by an integrated system has made our online system the center of the library's operation. It has often opened up new lines of communication and indirectly provided new services. For example, when improvements or limitations of the computer are discussed between computer support staff and other library departments, problems or "wish lists" are often discovered.

There are advantages and disadvantages experienced by turnkey system libraries. Most of them were probably considered by the libraries represented here before they made the choice to buy a turnkey system or develop their own.

Costs of initial purchase, maintenance, and future growth are largely prestated, and research and development costs are shared by all customers and future customers. If the library examines the system carefully it can buy a known product, or special requirements can be specified in the contract. Libraries can share experiences, innovations, and problems. The acquisitions and community files at Evanston are based on ideas from other CLSI libraries. A copy of the instructional video cassette produced by Iowa City was made for Evanston and we loaned it to a local library for use in explaining the system to library board members and as a staff training tool.

This ability to share experiences and problems with other libraries, and to work with CSLI, led to the development years ago of the CLSI Users Groups. Today there are five regional groups and a loosely coordinated national meeting at the summer ALA convention. The regional groups developed independently of each other, and each went through similar maturation stages. Early meetings were usually gripe sessions -- often emphatically vocal. The meetings helped changed attitudes in several ways: (1) System reliability improved as result of improved technology, the increasing computer sophistication of library staff, and CLSI's efforts. It is easier to be calm and collected at a users meeting when you know your library's system is functioning properly. (2) As integrated systems started emerging and libraries bought non-CLSI peripheral equipment or micro equipment, results of these experiences were shared, and sections of the meetings developed that did not directly involve CLSI staff. (3) Users found that a unified, structured approach was the best way to convey concerns and priorities to CSLI. The effectiveness of this approach was seen at the national meeting in Philadelphia in 1982, when

CLSI agreed that a new handling charge for the application of new software (which every regional group had protested) would not be imposed.

To their credit, CLSI responded in a very positive manner to the efforts of the users groups to establish more control by members. CLSI is perhaps the most complete turnkey system, as originally all hardware, software, and maintenance had to be purchased from them. Users felt that much of the new software was developed to meet the company's priority of attracting new customers, rather than to meet the daily needs of current customers. In response to this need, CLSI created the National Advisory Council, composed of one representative from each regional group. The council meets once a year with CLSI to suggest software enhancements and to recommend priorities in development. CLSI later created a second subcommittee from the regional groups, called the National Policy Council, to try to work out mutually satisfactory solutions to problems such as distributing new software. They have encouraged a feeling of control by (a) offering the option of custom-designed software to libraries that are willing to pay development costs, and by (b) allowing the use of, and defining the responsibility for, non-CLSI equipment (such as CRTs or multiplexors).

It is inevitable that a turnkey vendor will sometimes appear as a "villain". In fact, one of the most obvious differences between a turnkey and library-designed system is that in a turnkey system someone outside the library staff always wears the "black hat". To some extent there are advantages to this situation. The most evident advantage is a variation of that modern scapegoat phrase "it's the computer's fault." In a turnkey system it is the computer company's fault. Problems in programming, down time, and slow response on busy days are readily blamed on the computer company, an impersonal, anonymous figure with no feelings to hurt. I use a variation of this defense myself when I have to explain to patrons why we cannot immediately apply their suggested improvements to the online catalog.

All library departments are able to work together to find the best way to use the system, and to suggest improvements. Similarly, the individual libraries in the users groups work together. An awareness of this unity encourages the vendor to work as hard as possible to prove that it is really a friend and partner.

D. Susan Stearns

CLSI

The vendor has an important role to play in communication with library staff, and the communication process has become much more complex as libraries move to integrated, turnkey automation projects, such as the systems CLSI provides. For example, CLSI has had a communications channel, variously called the Trouble Desk and the Systems Support Group, made up primarily of software systems staff and diagnosticians who evaluate software and hardware problems. Since they are often the only vendor staff with which library personnel communicate, they are also called upon to deal with library operational problems. CLSI troubleshooting staff should have a sound understanding of library procedures and library jargon, and a sensitivity to the problems of librarians who must deal with users. These qualities become even more important in working with libraries with online catalogs, online acquisitions systems, and interfaces between one or more automated sub-systems.

While vendors should train systems staff in understanding the problems of the librarian, librarians should also be trained to communicate with vendor diagnosticians. Mutual expectations of vendors and customers should be clear from the beginning of an automation project; both should understand what services will be provided and what the implications of those services are. Perspectives of the two groups are different and will remain different, but there can be an understanding of each other's position with more communication and involvement in system design of all products. For this purpose, CLSI has a librarian-staffed Product Specification Group that decides, from a functional point of view, which products will be developed.

Librarians often assume that vendor systems representatives are the same as the programming staff, and the representative is often the only vendor staff person library staff will see. This association means that the representative must thoroughly understand the system and its abilities in order to accurately represent the system to librarians in the field. Within the vendor organization, the representative must communicate well with software and hardware systems staff. Different information and levels of understanding on the part of field representatives lead to the problem of librarians receiving different answers to the same question and being unable to determine which one is correct.

Vendors, especially programming staff, help contribute to the problem of automation jargon. Part of the role of specification staff is to keep jargon under control so that communication will not break down in the library environment. The language of library automation can be simplified by user groups, advisory councils, and individual customer communication, both in writing and over the phone.

Library customers also need to be involved in the early developmental stages of an automated system. This involvement has not always been the case in the past but is becoming more common. Again, expectations for the system should be agreed upon, as the vendor may not be able to supply all the desired elements that library staff may suggest, and promises should not be made for systems that cannot be delivered.

Initial education in the system is important, but the education process should continue after the installation of an automated system. Turnkey customers have, in the past, felt that they were a captive audience after purchasing a system. Ongoing training is an important aspect of customer/vendor relations, but should be contracted for separately from software module charges due to its continuous nature. In-depth conceptual training with hands-on experience cannot be offered to all customers without a charge, and CLSI does charge for its training program. To date, all sessions have been full and have proven that good training at a reasonable price will be purchased by libraries.

Vendors and customers must have more than a sales relationship to develop long-range automation plans and to develop a complex system. Although we could use more "terminal-friendly users", vendors need to begin serving as intermediaries between library staff and their online systems.

E. David Penniman

OCLC, Inc.

From the system designer's perspective, we need to improve our communication with public service librarians, but it should be with the library patron in mind. The goal is not improved communication between system designers and libraries; that should only be a means to an end -- the end being improved service to library patrons.

The following five techniques can help to foster effective communication between system designers and librarians:

- Gain support from the top level of administration, by executive decree if necessary, for procedures that encourage (or require) such communication.
- Implement an approval mechanism for functional specifications that involves a committee of both system designers and librarians.
- Encourage vendor organizations to place library specialists in their marketing components and charge them with specification development to insure that user needs are effectively translated into product specifications.
- Use prototyping and simulation to reduce the effect of language and jargon problems between designers and librarians. Rather than relying entirely on specifications, use a real example of what the system or user interface should look like as a means of transferring needs and expectations between vendors and library staff.
- Capitalize on informal relationships between library staff and system vendors as a means of building mutual respect.

All of these techniques must be applied within an environment in which the needs of the patron are paramount. There are three rules to help meet patron needs: Simplify, simplify, simplify. This means:

- Simplify entry into the search system (it should be at least as easy as opening a card drawer).
- Simplify learning the basic features of the system (these features should be no harder to learn than riffling cards).
- Simplify learning additional features of the system by presenting them only after basic capabilities have been mastered. The best time to learn a feature is when it is needed; do not teach too much too soon.

DISCUSSION HIGHLIGHTS

There is a major question of where librarians and systems staff should stand on the issues of jargon, mutual respect, and understanding. Participants expressed concern that librarians and programmers should not necessarily mix disciplines and learn each others' skills, but should learn mutual respect for each other. The two groups have already grown closer in terms of expectations and vocabulary, and more librarians are interested in the design of systems, so the working relationship has grown closer, making this question less a problem than it was in the past. Although librarians need not be programmers, systems people should take what librarians want and make it work.

In order to do this, some participants felt that horror stories and worst-case problems should come out so that system designers could build around worst possible cases. Both groups should speak "user", not library or systems jargon, and the ideal automation project should be run by someone who can balance and manage both librarians and designers.

A point which had not previously been raised was the function of funding in systems design. Dollars are the biggest question when a library is trying to get a system with all the features it considers necessary.

Programmers are becoming more user-oriented, and microcomputers are being used by libraries for user interfaces that have helped once more to bring the two groups together and to save money in system design.

VII. SUMMARY OF THE CONFERENCE

The Conference on Training Users of Online Public Access Catalogs brought together a diverse group of librarians, systems designers, and vendors, each with a particular perspective on training a specific user population. While the perspectives varied, four main themes seemed to run through all or most of the presentations and discussions at the conference:

1. Communication
2. Diversity versus Standardization
3. Training versus System Enhancement
4. Goal-oriented Training versus the Learning Environment

This chapter briefly summarizes, along the lines of those topics, the essence of the conference. Some of the ideas presented here are derived from comments made by participants during the final hour of the conference.

COMMUNICATION

Development of a successful online catalog depends on effective communication between public services and technical service staff within the library, between librarians and systems staff or vendors, and between librarians and their user populations. Libraries are one of the most complex institutions with which the public must deal, and the online catalog can contribute to the resolution of this complexity. Libraries must be willing to simplify their communication with users or be willing to spend large amounts of time and money on training and additional public service staff.

Communication between librarians on the strengths and weaknesses of their online systems and training programs is an effective way of refining programs and adapting successful system enhancements. Discussions of successful and failed programs are necessary if librarians are to learn how to instruct users in the most effective and least costly manner. Public, college, and university libraries need to exchange information and compare techniques with vendors, network staff, and systems designers to bring about a greater cross-fertilization of ideas. Although communication between system staff and librarians has improved greatly over the last few years, the needs of users are still not well understood.

Systems need to be less intimidating to users. This change can be accomplished by using language understandable to users and avoiding jargon wherever possible. Systems should be user friendly but the concepts of friendliness and wordiness should not be confused. Systems need to be user informative and provide the information necessary to make use of the system and successfully meet user information needs.

Users are becoming more computer-sophisticated each year as they are called upon to use automated systems in other daily activities. As a larger percentage of the user population becomes comfortable with online systems, librarians will be less involved in promoting the idea of automation and will become more involved in helping users take full advantage of the library. This change can be accomplished through effective communication based on mutual respect and a common language for users, librarians, and systems staff.

DIVERSITY VERSUS STANDARDIZATION

Conference presentations and dial-access demonstrations showed great diversity between systems and no standardization in access points or retrieval techniques. Yet there is little demand for standardization of online catalogs among librarians.

Standardization is a problem in the area of resource sharing, but not necessarily in instruction. Card catalogs were never totally standardized from one institution to another, and yet users were able to adapt to differences after developing a basic understanding of what the card catalog represented. Standardization of systems is not as important as transferability of skills from one system to the next. This is analogous to driving different models of cars after an initial adjustment period once the basics of driving have been mastered.

TRAINING VERSUS SYSTEM ENHANCEMENT

Librarians train users in the online catalog but do not know if what users learn is effective. Evaluation of training programs is essential to improved teaching techniques. However, no matter how good instruction in the online catalog is, some people will not take advantage of instructional programs. They must be taught how to use the system without their realizing it. This can be done by continually redesigning systems to optimize success factors. It is easy to change a help screen or reword prompts, but it is difficult to redesign a system to retrieve information at the article level, search multiple files, or add Boolean logic, although these are the types of enhancements that will assist users.

Continued development of online systems is essential. In the beginning, libraries focused on bringing up the online system, then developed in-depth training programs to bring about a closer working relationship and increased communication with patrons. As a result of contact with online users in public service areas and in training programs, librarians have been able to pinpoint areas of the online catalog that cause problems for users.

Libraries are now ready to redesign online catalogs to include transparent logic and built-in instructional programs. Training of users will still be necessary but will now include more sophisticated theories, such as the perspective of human factors involved in learning a complex system and the question of ergonomics.

There is no such thing as a perfect online catalog; this lack is good because it encourages librarians and system staff to continue to work on enhancements. Redesign of catalogs has entered a new phase. This is an exciting time to be in system design but it must be remembered that this is a marketplace, and whatever libraries offer their patrons will be in proportion to the share of resources they are willing to commit to the online catalog. Librarians should evaluate user needs and then plunge ahead to the next stage of system enhancement and more sophisticated instructional programs.

GOAL-ORIENTED TRAINING VERSUS THE LEARNING ENVIRONMENT

Each library interfaces with users in a different way. Most libraries have settled on a wide variety of approaches to teach users the online system, allowing individuals to choose the method most acceptable to them. Printed materials, online help commands, workshops, group instruction, tours, tutorials, and interaction with library staff all have as their goal the idea of teaching patrons how to work directly with the online catalog. Though specific emphases or techniques may differ, most libraries have concluded that the more instruction methods used, the larger and more diverse will be the user population reached.

Library instruction and institutional philosophy has been one of the most interesting topics raised. The question of what role the library should play in instruction in the online system has two basic approaches. One approach charges the library with providing patrons with an environment for learning. This environment would include factors as diverse as the physical structure of the building and the transparency of the logic and structure of the online system. This concept stresses the role of the patron in assuming responsibility for educating himself or herself about the system and about the greater area of search strategy and bibliographic literacy. This education should be possible if the entire environment is geared toward making the steps that the patron is expected to follow clear, logical, and reinforced by all external factors. This process would teach patrons how to think about what they are doing and should lead to a greater conceptual understanding of the entire system.

The other approach, based on practicality and the use of existing library resources, is to teach patrons how to use a specific system, which buttons to press, and how to interpret data that are retrieved. This approach requires less of the patron; he or she only needs to develop a functional understanding of the online system geared toward goal and task-oriented system use. This does not leave learning about the system to chance and instructs users directly in those areas that may be problematic or might be especially useful.

These two approaches reflect the dichotomy between short- and long-term library instruction and short- and long-term library use patterns. The extent to which a library adopts one of these attitudes will be dependent on the types of users seen most often and their needs.

Just as each philosophy of instruction is geared toward perceived user needs, each automated system is structured to fit the retrieval needs of the library based on access points, budget, and limitations of technology and staff. Library patrons will continue to become more sophisticated in computer use. This will allow for more sophisticated online systems and instructional programs geared to an informed audience. To monitor changing user needs, refine instruction, and design needed system enhancements, it is necessary for librarians, users, system designers, and vendors to have mutual respect and understanding for each other's needs and abilities. Communication is the key.

VIII. RECOMMENDATIONS

While no formal attempt was made to arrive at recommendations, some did flow naturally from the discussions at the conference. These three recommendations seemed to have the full support of participants:

(1) Establish a clearinghouse for materials related to instruction of patrons in the online public access catalog. The clearinghouse would include examples of sample screens and teaching tutorials, for example, and ideas and suggestions from participating libraries.

(2) Schedule a conference on the state of library instruction in general, which would look at the online catalog in the context of other bibliographic instruction programs.

(3) Schedule a follow-up conference on teaching patrons use of the online public access catalog in three to four years' time, in order to build on information exchanged at this conference. This follow-up should include small group sessions. Specific ideas for pilot instructional programs should be one of the topics discussed at the conference.

APPENDICES

APPENDIX A

LIST OF PARTICIPANTS

TRAINING USERS OF ONLINE CATALOGS
Trinity University, San Antonio, Texas
January 12-14, 1983

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(315) 423-2575

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(202) 287-5515

Helen Bagdoyan
Dahlgren Memorial Library
Georgetown University Medical School
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Washington, D.C. 20013
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Christine Borgman
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Barbara Brown
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404 Sixth Avenue
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Denver, Colorado 80208
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Iowa City, Iowa 52240
(319) 356-5200

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Earlham College
Richmond, Indiana 47374
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(206) 786-1111

Bruce Zigman
Washington Library Network
Washington State Library
Olympia, Washington 98504
(206) 459-6538

The following regional library directors and librarians were guests at the opening session of the conference:

Georgene Bias, St. Phillips College

Robert A. Houze, Trinity University

Michael Kelly, University of Texas at San Antonio

Dave Kronick, University of Texas Health Sciences Center at San Antonio

Louis Maloney, Southwest Texas State University

Mendell Morgan, Incarnate Word College

J. O. Wallace, San Antonio College

Richard Werking, Trinity University

APPENDIX B

AGENDA

TRAINING USERS OF ONLINE CATALOGS
Trinity University, San Antonio, Texas
January 12-14, 1983

* *

SESSION ONE - JANUARY 12, 1983

5:30 p.m.	Registration/Reception
6:00 p.m.	Dinner
7:00 p.m.	Welcome, Introductions, Background -- Lee Jones
7:15 p.m.	Teaching the Public Catalog -- Evan Farber
8:00 p.m.	Capsule Summary of the Online Public Access Catalog Study -- Doug Ferguson
8:30 p.m.	Questions, Comments, Discussion
9:00 p.m.	Break for the Evening

* *

SESSION TWO - JANUARY 13, 1983

8:45 a.m.	Announcements, Welcome, Meeting Details
9:00 a.m.	Training Users of Online Catalogs
9:00-9:50 a.m.	Northwestern University -- Brian Nielsen
9:50-10:40 a.m.	Mankato State -- Sandra Ready
10:40-11:30 a.m.	Pikes Peak System -- Lynn McGrath
11:30-12:20 p.m.	Dartmouth College -- Emily Fayen

12:20 p.m.	Lunch Break
1:20-2:10 p.m.	University of California -- Anne Lipow
2:10-3:00 p.m.	Iowa City Public Library -- Lolly Eggers
3:00-3:50 p.m.	Guelph University -- Ellen Pearson
3:50-4:40 p.m.	University of Illinois -- Danuta Nitecki
4:40-5:30 p.m.	Library of Congress -- Linda Arrett
5:30 p.m.	Break
6:00 p.m.	Dinner

* *

SESSION THREE - JANUARY 13, 1983

Hands-On System Demonstrations

6:50 p.m.	Set-up of Online Systems
7:00 p.m.	Simultaneous Demonstrations
	Biblio-Techniques -- Woods and Zigman
	Guelph -- Pearson
	Mankato -- Ready
	National Library of Medicine -- Weise
8:00 p.m.	Set-up of Second Set of Systems
8:10 p.m.	Simultaneous Demonstrations
	Dartmouth -- Fayen
	DataPhase -- Schmidt
	Georgetown University Medical Library -- Bagdoyan
	University of California -- Ritch and Lipow
9:00 p.m.	Break for the Evening

* *

SESSION FOUR - JANUARY 14, 1983

9:00 a.m.	Public Service Staff/System Staff Communication -- Panel Discussion o Pat Swanson o Ruth Gibbs o Trarie Kottkamp o Susan Stearns o Dave Penniman
10:00 a.m.	Human Factors in Online Catalog Use, or Why Do Users Fail? -- Christine Borgman
10:45 a.m.	Summary of the Conference -- Marsha McClintock
11:15 a.m.	Final Comments by Participants
12:00 noon	End of Conference

* *

APPENDIX C

HANDOUTS DISTRIBUTED BY PARTICIPANTS

Biblio-Techniques
- BLIS Online Catalog
- BLIS Online Catalog Terminal Keyboard Guide
- BLIS Software Description
- BLIS Software Description, Part 2
- BLIS Software Description, Part 3
- Telex 476L Library Terminal
- Telex Buffered Printer

DataPhase
- For Your Information (packet) containing:
  - Automated Library Information System Software Description
  - System Evaluation Series - Acquisitions
  - System Evaluation Series - The Academic Library
  - System Evaluation Series - Circulation
  - System Evaluation Series - Growth and Potential of Information Management in the 80's: The ALIS-E System
  - System Evaluation Series - The Multi-Library System
  - System Evaluation Series - Public Access Catalog
  - System Evaluation Series - The Public Library
  - System Evaluation Series - Software Engineering of ALIS: Evolution of an Application

Guelph University
- Access
- Cat-on-Line
- Circulation System (bookmark)
- Library Instruction (flyer)
- Library Orientation Drop-in Tours (flyer)
- Library Programmes

Iowa City Public Library
- Computer Catalog Instructions

Library of Congress
- Introducing MUMS
- Introducing SCORPIO
- Instruction Methods Used for Library of Congress Information System
- LCCC Library of Congress Computerized Catalog - SCORPIO
- Library of Congress Computers
- Library of Congress Information System - FIND, Component Word Searching
- Library of Congress Information System - MUMS Search Service

Library of Congress Information System Users Manual
Sign-on Messages for Two SCORPIO Files
TEACH TUTORIAL
XMIT Only

Mankato State University
How to Use the Catalog Access System
Library Catalog Access System
Online Catalog Commands
Online Catalog Help Script 9/3/82

Northwestern University
LUIS Information

Pikes Peak Library District
1-2-3 The Online Catalog
If Your Library Wants to do More Than Check Out Books, Then Maggie's Place is for You!

Syracuse University Libraries
SULIRS User's Guide

Trinity University
How to Find Audiovisual Materials
How to Find a Book
How to Find a Government Document
How to Find a Periodical

University of California - Berkeley
MELVYL Clinic
MELVYL Users' Guide